THE LANCET.

No. 4740. Vol. CLXXXVII. LONDON, SATURDAY, JULY 4, 1914. Pp. 208

CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

THE MILROY LECTURES (Abstracts of) on the Hygienic Aspect of the Coal-mining Industry in the United Kingdom. Delivered before the Royal College of Physicians of London by FRANK SHUFFLEBOTHAM, M.A., M.D. Cantab., J.P., Medical Referee under the Workmen's Compensation Act for the North Staffordshire District.—Lectures IV. and V. 1

ORIGINAL ARTICLES.

Meditations on 1000 Consecutive Abdominal Operations at the Prince of Wales's General Hospital, Tottenham. By ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin., Gynæcologist to the Prince of Wales's General Hospital, Tottenham; Surgeon to the Chelsea Hospital for Women.—(*Illustrated*) 8

Diseases of the Pituitary Gland and their Effect on the Shape of the Sella Turcica. By E. G. FEARNSIDES, M.A., M.D., B.C. Cantab., B.Sc. Lond., M.R.C.P. Lond., Medical Registrar, London Hospital; Assistant Physician to the Hospital for Epilepsy and Paralysis, Maida Vale, W.—(*Illustrated*) 16

A Case of Triplets Successfully Breast-fed. By JAMES MORRISON, M.D. Lond. 23

A Pathological Investigation of Four Cases of Pituitary Tumour. By W. JOHNSON, M.D. Lond., M.R.C.P. Lond., Gull Student, Guy's Hospital. (From the Pathological Department, Guy's Hospital).—(*Illustrated*) 24

Removal of a Foreign Body from the Larynx by Suspension Laryngoscopy. By DAN MCKENZIE, M.D. Glasg., F.R.C.S. Edin., Surgeon, Central London Throat and Ear Hospital.—(*Illustrated*) 28

The Milk and Dairies Bill and the Bacteriological Examination of Milk. By R. TANNER HEWLETT, M.D. Lond., F.R.C.P. Lond., D.P.H., Professor of Bacteriology in the University of London (King's College) 44

REVIEWS AND NOTICES OF BOOKS.

Plague and Pestilence in Literature and Art. By Raymond Crawfurd, M.A., D.M. Oxon., F.R.C.P. Lond. 29

Abhandlungen aus dem Gebiete der Geburtshilfe und Gynaekologie. Herausgegeben von Professor Dr. W. Tauffer 30

Leitfaden für das Embryologische Praktikum, und Grundrias der Entwicklungslehre des Menschen und der Wirbeltiere. Von Professor Dr. Albert Oppel 31

Anæsthetics: their Uses and Administration. By Dudley W. Buxton, M.D. Lond. Fifth edition 31

Lectures on Dietetics. By Max Einhorn, M.D. 31

Taschenbuch der Augenheilkunde für Aerzte und Studierende. Von Dr. Curt Adam 32

Medical and Sanatorium Benefit Regulations, &c. Edited by J. Henry Lloyd 32

The Science and Practice of Dental Surgery by Numerous Authors, with an Appendix on Dental Jurisprudence. Edited by Norman G. Bennett, M.A., M.B. Camb., L.D.S. Eng. 32

Plain Rules for the Use of Tuberculin. By R. Allan Bennett, M.B. Lond. 33

Communicable Diseases: an Analysis of the Laws and Regulations for the Control thereof in Force in the United States (Public Health Bulletin, No. 62). By J. W. Kerr and A. A. Moll, A.B. 33

Principles of Property. By J. Boyd Kinnear 33

Minimum Rates in the Chain-making Industry. By R. H. Tawney 33

Miscellaneous Volumes 34

REPORTS AND ANALYTICAL RECORDS FROM THE LANCET LABORATORY.

Collothiol Preparations 35

"Vaporole" Nucleïn 35

Potato Extract Preparations 35

Sedobrol 35

Plasmon Oat Food 35

NEW INVENTIONS.

A New Archimedean Drill.—(*Illustrated*) 35

An X Ray Screen Compressor for the Detection of Urinary Calculus.—(*Illustrated*) 36

LEADING ARTICLES.

THE WORKING OF THE NATIONAL INSURANCE ACT 37

THE PITUITARY BODY IN HEALTH AND DISEASE 38

THE DOGS PROTECTION BILL 39

ANNOTATIONS.

The Children's Country Holiday Movement and Infectious Disease 41

Gunshot Wounds of the Spleen 41

The Museum of the Royal College of Surgeons of England 41

Hypothyroidism 42

The Streptobacillus Pellagræ 42

The Vesalanium Mistaken for Fracture of the Fifth Metatarsal Bone 43

Argyrism following the Use of Collargol 43

Section of Nerve-roots for Brachial Neuralgia 43

PUBLIC HEALTH.

Annual Reports of Medical Officers of Health 46

VITAL STATISTICS:

Health of English Towns 47

Health of Scotch Towns 48

Health of Irish Towns 48

SPECIAL ARTICLES.

Medico-Legal Society: Discussion on Incipient Insanity 36

Epsom College: Annual General Meeting 45

Royal Commission on Venereal Diseases 46

The Services: Marriage "Off the Strength."—"The Military Surgeon."—Voluntary Aid Detachments 49

Medical Practice under the Insurance Act. L.—Norfolk and Norwich, with a Note on Ipswich.—(*Concluded*) 51

HOME AND FOREIGN NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Manchester 54

Ireland 54

Paris 54

Berlin 55

United States of America 56

China 56

CORRESPONDENCE.

The Mental Deficiency Act (Dr. Chas. A. Mercier) 58

The Society of Members of the Royal College of Surgeons (Mr. Percy Dunn) 58

Some Points in the Management of Trachoma (Mr. J. F. Cunningham.) 59

Coloured Chloroform and Ether (Dr. P. F. Barton) 60

Oral Sepsis (Dr. G. L. Kerr Pringle) 60

Intracranial Injections of Salvarsanised Serum in Parenchymatous Syphilis of the Central Nervous System (Dr. G. H. Monrad-Krohn).—(*Illustrated*) 61

Evacuation of Ascitic Fluid through a Slender Cannula (Sir Lauder Brunton) 62

The National Medical Union (Mr. E. H. Worth) 62

Touching for the King's Evil (Dr. Raymond Crawfurd) 62

The Medical Defence Union (Mr. Dennis Vinrace) 62

Ultramicroscopic Virus (Dr. J. T. C. Nash) 62

An Explanation (Mr. F. Handel Booth, M.P.) 63

Carbolic Acid Injections in Tetanus (Mr. W. Graham Reynolds) 70

A Warning (Mr. Macleod Yearsley) 71

The Eyesight of Recruits (Dr. J. A. Wilson) 71

THE NATIONAL INSURANCE ACT.

Proprietary Medicines and the Insurance Act 63

Hospitals and the Insurance Act 63

The National Medical Union 64

Election of Medical Representatives upon the London Insurance Committee 64

Provision of Shelters in London 64

MEDICAL NEWS.

National Association for the Prevention of Infant Mortality and for the Welfare of Infancy 23

Fire Prevention 34

Royal Society of Medicine: Electrotherapeutic Section 50

Medical Sickness and Accident Society 53

London Dermatological Society 53

Donations and Bequests 58

Ilford and its late Medical Officer of Health 63

The Clinical Congress of Surgeons 64

University of Oxford: Pass-list 65

University of Sheffield (Faculty of Medicine): Pass-list 65

University of Durham (Faculty of Medicine): Degrees conferred 65

Complimentary Dinner to Dr. John Brownlee 65

St. Thomas's Hospital Medical School 65

Research Defence Society 65

Literary Intelligence 66

Death of a Centenarian 66

Presentation to a Medical Man 66

Tuberculosis Society 66

St. George's Hospital 66

Central Midwives Board 66

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: Milk and Dairies Bill.—Milk and Dairies (Scotland) Bill.—Vital Statistics for 1912 66

House of Commons: Glasgow Chemists' Accounts.—The Budget Grants.—The Mortality of Seamen.—National Insurance and the Government of Ireland Bill.—The Tariff to Chemists in Scotland 67

Books, &c., received 67

Appointments 68

Vacancies 68

Births, Marriages, and Deaths 69

Notes, Short Comments, and Answers to Correspondents 70

Meteorological Readings 72

Medical Diary 72

Acknowledgment of Communications received 73

INDEX TO VOL. I., 1914 ..... iii.-xlvii.
TITLE-PAGE.

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

PAGE

BAILLIERE, TINDALL & COX —
Aarons .... Aids to Gynæcology Cover 1
Bayly ..... Syphilis, &c. .. Cover 1
Bligg ..... Indigestion, &c. 6
Castellani & Chalmers. Tropical Medicine .. 3
Cunning .. Aids to Surgery Cover 1
Freyer .... Enlargement of the Prostate 6
" .... Surgical Diseases of the Urinary Organs 6
Harrower .. Hormone Therapy .. 5
Hudson .... Aids to Medicine Cover 1
McCaw .... Aids to Diseases of Children .... Cover 1
McCaw .... Diseases of Children 3
Morison .... Disorders of Heart.. 3
Mummery .. Diseases of Rectum and Anus Cover 1
Robertson .. Aids to Forensic Medicine .... Cover 1
Tibbles .... Dietetics 3
Underwood . Aids to Dental Anatomy ..... Cover 1
Wallace .... Common Diseases in Childhood .. Cover 1

BALE, SONS & DANIELSSON :—
Cornet .... Tuberculosis in Children 5
" .... Acute General Miliary Tuberculosis 5
De Quervain Clinical Surgical Diagnosis 5
Elliott .... Greek and Roman Medicine 5
Goodwin .. Field Service Notes.. 5
Hurry ..... History of Reading Pathological Society Cover 1

BLANCHARD COMPANY :—
Faulkner .. Tonsils & the Voice.. 6

CHURCHILL, J. & A. :—
Hurry ..... Vicious Circles in Disease..... Cover 1
" ..... Ideals and Organisation of a Medical Society ..... Cover 1

CROSBY LOCKWOOD & SON :—
Bassett .... The Elements of Chemistry 6

FROWDE AND HODDER & STOUGHTON :—
McCann .. Cancer of the Womb, &c. ..... Cover 1

GRIFFIN & CO. :—
Lambart .. Tropical Diseases.... 7
Saundby .. Diseases of Digestive System 7

KIMPTON :—
Forrest .... Eye, Ear, Nose and Throat..... Cover 1

LIVINGSTONE (EDIN.) :—
Glaister & Logan..... Gas Poisoning Cover 1
Hewat .... The Examination of the Urine .. Cover 1
The Student's Pocket Prescriber Cover 1
Whittaker.. Surgical Anatomy Cover 1

LONGMANS, GREEN & CO. :—
Halliburton Chemical Physiology Cover 1

MACMILLAN & CO. :—
Ballance .. Cerebral Decompression in Ordinary Practice 6
Milligan, Sir W. & Wingrave. Practical Handbook of Diseases of the Ear 7

MEDICAL PUBLISHING CO. :—
Lane, Sir W. A.. Operative Treatment of Fractures 7
" Cleft Palate and Hare Lip 7

MURRAY :—
Brunton, Sir T. L.. Therapeutics of the Circulation.. Cover 1

NISBET & CO. :—
Lane, Sir W. A.. Treatment of Chronic Constipation 7
Romer & Creasy .. Bonesetting and the Treatment of Painful Joints..... Cover 1

OPHTHALMOSCOPE PRESS :—
Stephenson. Eye-Strain in Everyday Practice. Cover 1

OXFORD UNIVERSITY PRESS :—
Berkart .... On Bronchial Asthma Cover 1

PULMAN & SONS :—
Elliot ..... Sclero-Corneal Trephining 6

SCIENTIFIC PRESS :—
Hurry ..... District Nursing on a Provident Basis Cover 1

SIR ISAAC PITMAN & SONS :—
Medical and Sanatorium Benefit Regulations 5

SMITH, ELDER & CO. :—
Ellis's Demonstrations of Anatomy 5
Gamble ..... Animal Life 5
Laurence .. A Nurse's Life in War and Peace 5
Leftwich .. Index of Symptoms.. 5
Macleod .... Hygiene for Nurses.. 5
Marshall & Hurst .... Practical Zoology 5
Waglyn .. How to Diagnose Small-pox 5

UNIVERSITY OF LONDON PRESS :—
Cole ..... Mental Diseases 6
Fox ..... Waters and Baths .. 6
Stevens .... Diseases of Women .. 6
Turner & Carling .. Treatment after Operation 6

WRIGHT & SONS (BRISTOL) :—
Smith..... Lateral Spinal Curvature and Flat Foot Cover 1

MEDICAL LIBRARIES, &c. :—
An English Medical Guide to Chatel-Guyon-les-Bains .. Cover 1
Rehnke—Stammering 6
Evans Sons Lescher & Webb—Evans' Journal 56
Kelley—Stammering 6
Matthews Bros.—Wood: Application of Trusses 6

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT :—
Ankylostomiasis Campaign in Trinidad..... 73
Argyll and Bute District Asylum, Lochgilphead 75
Bedford County Hospital..... 71
Bethlem Royal Hospital 74
Birmingham General Dispensary.. 73
Board of Control 70
Bolingbroke Hospital, Wandsworth Common 75
Bolton Infirmary and Dispensary. 71
Bootle Borough Hospital..... 70
Borough Hospital, Birkenhead.... 70
Bradford Royal Infirmary 74
Brentford Union Infirmary, &c. .. 75
Bristol Royal Infirmary 72
Camberwell Tuberculosis Dispensary 74
Chelsea Hospital for Women..... 74
Chelsea Infirmary 74
Children's Hospital, Sheffield 75
City of Liverpool Infectious Diseases Hospital 74
City of Westminster Union..... 72
County Borough of Preston 73
Derby Mental Hospital..... 72
Devonshire Hospital, Buxton 72
Durham County Hospital 72
East London Hosp. for Children, &c., Shadwell 72
Elder Dempster & Co., Liverpool.. 75
Essex County Hospital, Colchester 70
Essex Education Committee 74
Evelina Hospital for Sick Children 72
Gloucestershire Education Com. 70
Hertford County Hospital 72
Hospital for Consumption and Dis. of the Chest, Brompton 71
Huddersfield Royal Infirmary 74
Hull Royal Infirmary..... 71
Hulme Dispensary, Manchester .. 73
Indian Medical Service..... 75
Kent County Asylum, Maidstone.. 70
King Edward VII.'s Hos., Cardiff. 70
King Edward VII. Sanatorium, Midhurst 70
King's College Hos., Denmark Hill 76
Lambeth Parish Infirmary, &c..... 75
Leeds Public Dispensary 73
Leeds Tuberculosis Sanatorium, Gateforth 74
Liverpool School of Tropical Med. 75
Liverpool Stanley Hospital..... 73
Manchester Northern Hospital .. 70
Manchester Royal Eye Hospital .. 73
Monmouthshire Asylum, Abergavenny 75
New Hosp. for Women, Euston-rd. 75
North Lonsdale Hospital, Barrow-in-Furness 70
Northampton General Hospital .. 74
Nottingham General Hospital 73
Ormore and Garw Urban District Council 73
Preston Co. Asylum, Whittingham 72
Prince of Wales's General Hosp., Tottenham 71
Queen's Hospital for Children, Hackney-road 75

APPOINTMENTS—(Continued).
Queen's Hospital, Birmingham .. 72
Rochdale Infirmary & Dispensary. 70
Rotherham Hospital 70
Royal Albert Hospital, Devonport 70
Royal Alexandra Hospital for Sick Children, Brighton 70
Royal Cornwall Infirmary, Truro.. 72
Royal Free Hos., Gray's Inn-road. 72
Royal Halifax Infirmary 73
Royal Hampshire County Hospital, Winchester 74
Royal Infirmary, Sunderland 73
Royal Naval Medical Service..... 75
Royal Portsmouth Hospital 73
Royal Waterloo Hospital for Children and Women 75
St Mary's Hospital for Women and Children, Plaistow 75
Salford County Borough Fever Hospital 75
Salford Royal Hospital..... 74
Salisbury Infirmary..... 71
Salop Infirmary, Shrewsbury..... 70
Samaritan Free Hospital..... 71
Scarborough Hospital and Dispy. 71
Somerset County Council 75
South Devon and East Cornwall Hospital, Plymouth 73
State Criminal Lunatic Asylum, Retford 72
Surrey County Council 74
Swansea General and Eye Hosp... 70
University College 74
University College Hos., Gower-st. 71
Victoria Hospital for Children, Chelsea 72
Walsall and District Hospital 70
Warwickshire and Coventry Joint Com. for Tuberculosis 75
West African Medical Staff 75
West Bromwich and District Hos. 71
West End Hospital for Diseases of the Nervous System 75
West Ham and Eastern General Hospital 70
West Hartlepool Cameron Hosp. 74
West Kent General Hospital 74
West Norfolk and King's Lynn Hospital..... 71
Weston super-Mare Hospital 73
Willesden Urban District Council 71
Wolverhampton and Midland Counties Eye Infirmary 70

ASSISTANCIES, MEDICAL..... 75

ASYLUMS, HOMES, &c. :—
Abels Grove, Epsom 70
Ashwood House, Kingswinford .. 62
Association of Medical Men Receiving Resident Patients 69
Barnsley Hall, Bromsgrove..... 62
Barnwood House Hospital 65
Bishopstone House, Bedford 62
Bootham Park, York 62
Brunton House, Lancaster 69
Buntingford House Retreat, Buntingford 65

ASYLUMS—(Continued).
Camberwell House, Peckham-road 65
Cheadle Royal..... 63
City of London Mental Hospital, Stone..... 60
Clarence Lodge, Clapham Park .. 62
Colthurst House, Alderley Edge .. 63
Coppice, The, Nottingham 63
Dalrymple House, Rickmansworth 66
Dartmoor Sanatorium 67
David Lewis Colony, Alderley Edge 62
Duff House, Banff..... 66
Elliot, Southwell 60
Faraham House, Dublin 64
Ghyllwoods 65
Grove House, Church Stretton.... 63
Grove, The, Catton, Norwich..... 63
Haslemere Nursing Home 60
Haydock Lodge, Newton-le-Willows 64
Haynes, Brentwood 60
Helgham Hall, Norwich 63
Home for Epileptics, Maghull 62
Invernith Sanatorium, Colinsburgh 66
Kingsdown House, Box..... 62
1665, Kingsway 60
London Fever Hospital..... 63
London Sanatorium..... 66
Maison de Santé de Glain-les-Liége (Belgium) 61
Malling Place, Kent 63
Manna Mead, Blackheath 60
Maryville, Dublin 65
Melbourne House, Leicester 61
Mendip Hills Sanatorium 66
Middleton Hall, Co. Durham..... 62
Moat House, Tamworth 65
Newlands House, Tooting Bec Common 62
Newmains Retreat, Lanarkshire.. 65
Nordrach-on-Dee, Banchory 67
Northumberland House, Finsbury Park 62
Northwoods House, Winterbourne 64
Norwood Sanatorium, Ltd..... 65
No. 898, L.O., Strand 60
Osea Island, Heybridge..... 65
Peckham House..... 64
Pendgrin Hall Sanatorium, Nordrach-in-Wales 66
Plympton House, Plympton 63
Portsmouth Corporation Mental Hospital 62
Queen Alexandra Sanatorium, Davos Platz 66
Rudgwick Sanatorium, Sussex 60
Shaftesbury House, Formby-by-the-Sea 64
St. Andrew's Hospital, Dollis Hill 60
St. Andrew's Hosp., Northampton 63
St. Luke's Hospital for Mental Diseases 62
Springfield House Private Asylum, Bedford 62
Stretton House, Church Stretton.. 63
The General Manager, Craven-st.. 66
The Grange, near Rotherham 63
Vale of Clwyd Sanatorium 67
Warneford Asylum, Oxford..... 62

ASYLUMS—(Continued).
Wye House, Buxton..... 63
Yarrow Convalescent Home, Broadstairs 64
Zander Institute 64

FINANCIAL, &c. :—
Equitable Reversionary Interest Society.. 59

HEALTH RESORTS, BATHS, &c. :—
Allevard-les-Bains 68
Andermatt 68
Bad Wildungen 67
Droitwich 69
Harrogate Hydropathic Establishment 69
Peebles Hotel Hydropathic 69
Sanatorium Clavadel 67
Smedley's, Matlock 69
Westend Sanatorium, Karlsbad.. 61
Woodhall Spa 68

HOTELS :—
Hotel Windsor 69
Knowle Hotel, Sidmouth 68

HOUSE & ESTATE AGENTS :—
Lay Clark, Wimpole-street 77
Merriman, Temple 77
No. 901, L.O., Strand 77
CONSULTING-ROOMS :—
No. 991, L.O., Strand 77

LIFE & FIRE ASSURANCES, &c. :—
Medical, Sickness and Accident Society..... 41
Prudential..... 59

MASSAGE :—
Associated Male Nurses and Masseurs 60
London School of Massage 60
School of Massage and Swedish Remedial Exercises..... 60

MEDICAL ACCOUNTANTS, &c. :—
Turner..... 77

MEDICAL AGENTS :—
Fieldhall, Limited..... 79
Johnson 79
Manchester Clerical, &c., Assoc. .. 80
Medical Agency 80
Moore & Co. 75
Needes, Herbert..... 80
Needes, J. C. 80
Peacock & Hadley..... 79
Scholastic, Clerical, &c., Association..... 78
Turner..... 79

MEDICAL SCHOOLS :—
(LONDON.)
London School of Clinical Medicine 57
St. Mary's Hos. Medical School .. 58
West London Post-Graduate Coll.. 57
(PROVINCIAL, &c.)
University of Cambridge 58

For continuation of Index to Official and General Announcements, and Trade and Miscellaneous Advertisements, see page 4.

IMPORTANT PUBLICATIONS OF

BAILLIÈRE, TINDALL & COX

NOW READY.
The Most Important Work on the Subject.

DIETETICS
or—FOOD IN HEALTH AND DISEASE

Demy Octavo. Pp. xii. + 630. PRICE **12/6** NET.

Including a Chapter on Vitamines and Deficiency Diseases

By WILLIAM TIBBLES, L.R.C.P. Edin., M.R.C.S.Eng., L.S.A. Lond., LL.D., M.D. (Hon. Causa, Chicago), Medical Officer of Health, Melton Mowbray.

The subject is dealt with in this book somewhat differently than in other works on Dietetics. It contains the results of the latest investigations on Metabolism, &c., and a chapter on "Vitamines and Deficiency Diseases," which was added after the rest of the book was in type, makes it the only work on Dietetics which can now be regarded as complete.

NOW READY. Demy Octavo. Pp. xx. + 488. PRICE **15/-** NET.

PRACTICAL HORMONE THERAPY
A MANUAL of ORGANOTHERAPY for GENERAL PRACTITIONERS

By HENRY R. HARROWER, M.D.,

Sometime Professor of Clinical Diagnosis, Loyola University, Chicago; Fellow of the Royal Society of Medicine; Fellow of the American Medical Association.

With a Foreword by Professor ARTUR BIEDL, Vienna.

The introduction into therapeutics of preparations containing the active principles of the internal secretions is one of the greatest achievements of modern medicine. The principal object of this book is to broaden the therapeutic horizon and to stimulate the reader to include in his armamentarium such of the hormones as are of proved utility.

Pp. xxxii. + 1748. With 15 Coloured Plates and 630 other Illustrations.

SECOND EDITION. **TROPICAL MEDICINE** PRICE **21/-** NET.

By ALDO CASTELLANI and **ALBERT J. CHALMERS**

M.D. Florence; Director of the Clinique for Tropical Diseases, Ceylon, &c.

M.D., F.R.C.S.; Director, Wellcome Tropical Research Laboratories, Khartoum, &c.

"As regards fulness for reference on all tropical diseases, the book has no rival. ..... The work is certainly one of the most important contributions that has been made to tropical medicine in recent years."—JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

JUST PUBLISHED. Demy Octavo. Pp. xii. + 524. With 14 Plates and Illustrations. PRICE **10/6** NET.

DISEASES OF CHILDREN

By **J. McCAW,** M.D., Senior Physician, Belfast Hospital for Sick Children.

"We have read this book with some care, and have come to the conclusion that it contains all the information practitioners usually require."—LANCET.

JUST PUBLISHED. Pp. viii. + 162. With 51 Illustrations. PRICE **7/6** NET.

DISORDERS OF THE HEART (Motor and Sensory)

By **ALEXANDER MORISON,** M.D., F.R.C.P., Senior Physician, Great Northern Central Hospital.

"The book merits careful perusal and consideration, as it contains many striking criticisms of current theories and a new marshalling of ascertained facts."—BRITISH MEDICAL JOURNAL.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, London, W.C.

INDEX—(CONTINUED).

PAGE

NURSING INSTITUTES:—
Co-operation of Temperance Male and Female Nurses ... 60
General Nursing Association ... 60
Hospital for Sick Children, Great Ormond-street ... 61
Leeds Trained Nurses' Institution 61
London Nurses' Association ... 61
London Temperance Male and Female Nurses Co-operation ... 60
Male Nurses Temperance Co-operation ... 61
Mental Nurses' Co-operation ... 61
Nurses' Co-operation, Portland-place ... 61
Registered Nurses' Society ... 61
St. John's House ... 61

PAGE

NURSING INST.—(Continued).
St. Luke's Hospital ... 60
Temperance Association of Male Nurses, Ltd. ... 60
Temperance Male Nurses Co-operation ... 60
Temperance Male and Female Nurses Co-operation ... 60
The Retreat, York ... 61

OFFICIAL NOTICES:—
Astley Cooper Prize ... 58
Central London Throat, Nose and Ear Hospital ... 58
City of London Lying-in Hospital ... 57
College of Preceptors ... 58
Epsom College ... 61, 58

PAGE

OFFICIAL NOTICES—(Continued).
Hospital for Sick Children, Great Ormond-street ... 59
London Nerve Clinic ... 58
London School of Tropical Medicine ... 59
North-East London Post-Graduate College ... 58
Queen Charlotte's Lying-in Hospital ... 57
St. Bartholomew's Hospital and College ... 57
West End Hospital for Diseases of Nervous System ... 56
York-road General Lying-in Hospital, Lambeth ... 57

PARTNERSHIPS & PRACTICES 78

PAGE

RAILWAY & STEAMSHIP CO.'S:—
New Zealand Shipping Co. ... 59

SCHOOLS, PREPARATORY, &c.:—
Agricultural College, Aspatria ... 59
British and Foreign Schools Agency, Manchester ... 59
Institution Notre Dame, La Ferté-Macé ... 59

TUTORS & LECTURERS:—
Behnke ... 59
Carter ... 59
Gemmell ... 59
Med. Corres. College ... 59
Mueller-Walle System of Lip Reading ... 6
Stammering ... 6
Weymouth ... 57

TRADE AND MISCELLANEOUS ADVERTISEMENTS

AMBULANCES:—
St. John Ambulance—
Invalid Carriages ... 9

ANATOMICAL MECHANICIANS:—
Gressmith's Artificial Eyes, Legs, &c. ... 56

BOTTLE MERCHANTS:—
Isaacs ... 56

CARRIAGES, MOTORS, &c.:—
Armstrong—
Coachmen's, Grooms', and Chauffeurs' Liveries ... 9
Dunlop Rubber Co., Ltd.—
Dunlop Tyres and "V" Golf Balls ... 9
Morgan & Co.—
Morgan-Adler Carette ... 9
United Motorists Co-operative Supply ... 9

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Syno Hypophosphites ... 34
Tuberculine ... 35
Hyposol Ampoule-Syringe ... 35
Castor Oil ... 53
Angier Chemical Co.—
Angier's Emulsion ... 20
Armourchi, Nelson & Co.—
Radium Emanation Water ... 50
Battle & Co.—
Bromidia ... 16
Papine ... 16
Ecthol ... 16
Iodia ... 16
Benger's Food, Ltd.—
Pepsine Pills ... 24
Bishop, Ltd.—
Hydropyrin ... 18
Kalmopyrin ... 18
British Oxygen Co.—
Oxygen ... 53
Bullock & Co.—
Pepsina Porci ... 50
Acid Glycerine of Pepsine ... 50
Burroughs Wellcome & Co.—
Ernutin Brand Products ... 39
Carnrick & Co.—
Dry Peptonoids ... 37
Liquid Peptonoids ... 37
Christy & Co.—
Glyco-Thymoline ... 28
Ergoapiol ... 54
Clay, Paget & Co.—
Glycociastophos ... 16
Duncan, Flockhart & Co.—
Organo Therapeutical Preparations ... 25
Eccolent Compounds, Ltd.—
Eccolent Compound ... 31
" Powder ... 31
" Soap ... 31
Evans Sons Lescher & Webb—
Savaresse's Membranous Capsules ... 36
Bacteriological and Clinical Diagnosis ... 38
Anti-Diphtheritic Serum ... 38
Fairchild Bros. & Foster—
Peptogenic Milk Powder ... 38
Fassett & Johnson—
Emol Kelcet ... 45
Fellows—
Syrup of Hypophosphites ... 40

CHEMISTS—(Continued).
Gale & Co., Ltd.—
Entrapuro ... 54
Sugonum ... 54
" Antiseptics ... 54
Heppel & Co.—
Urodonal ... 30
Jubol ... 30
Globeol ... 30
Filudine ... 30
Hewlett & Son—
New Pharmaceutical Preparations ... 29
Hogg & Son—
Protein Nerve Food ... 56
Hudson's Eumenthol Chemical Co.—
Eumenthol Jujubes ... 48
Huggins—
Ozone Paper for Asthma ... 41
Kutnow & Co.—
Kutnow's Powder ... 27
Maltine Manufacturing Co.—
Maltine Compounds ... 37
Parke, Davis & Co.—
"Glaseptic" Ampoules of Sterilised Solutions ... 26
Raimes & Co.—
Slinger's Nutrient Suppositories ... 55
Regulin Syndicate, Ltd.—
Regulin ... Cover iii
Roberts & Co.—
Cord. Ext. Ol. Morrhuae Comp. 45
Saccharin Corporation, Ltd.—
Novocain ... 20
Diamalt ... 20
Tulloch's Dental Alloys ... 20
Saccharin ... 20
Trivalin ... 17
" Hyoscine ... 17
Smith & Co.—
Hall's Wine ... 51
Tidman's Sea Salt ... 55
Waterbury Chemical Company—
Cod Liver Oil Compound ... 50
Pinozyme ... 50
Welford & Sons—
Sauermilch ... 52
Widenmann, Breicher & Co.—
Zimmer's Preparations ... 17
Wilcox, Jozeau & Co.—
Dragées Gélineau ... 53
Willows, Francis, Butler & Thompson, Ltd.—
Drugs ... Cover iii
Pollantin ... 53
Wulfing & Co.—
Sanatogen ... 18
Zimmermann, A. & M.—
Atophan ... 22
Novatophan ... 22
Sperminum-Poehl ... 46
Zimmermann & Co.—
Radiogen ... 42
" Emanatorium ... 42

DISINFECTANTS:—
Allen & Hanburys
Medical Izal ... 32
Condy's Fluid ... 48
Quibell Bros., Ltd.—
Kerol ... 51
" Capsules ... 51
Sanitas Co.—
Sanitas Fluid ... Cover ii
Zimmermann & Co.—Lysol. Cover ii

ENGRAVERS (NAME PLATES) &c.—
Cooke & Co.—
Brass Name Plates and Lamps 58
Osborne & Co.—
Brass Door Plates ... 55

FOODS:—
Allen & Hanburys—
Allenburys Foods for Infants .. 35
Aylesbury Dairy Co.—
Humanized Milk ... 54
Benger's Food, Ltd.—
Essence of Rennet ... 24
Pancreatised Lentil Flour ... 24
Blatchley's Diabetic Preparations 52
Casein Limited—
Vi-Casein ... 55
Dietetic & Co.—
Soxhlet's Food Preparations .. 52
Mellin's Food, Ltd.—
Mellin's Food ... 44
Neave & Co.—
Neave's Milk Food ... 43
" Food for Infants ... 49
" Health Diet ... 49
Nestlés—
Pure Thick Rich Cream ... 23
Peter's Swiss Milk Chocolate ... 21
Savory & Moore—
Infants' Food ... 47
Southall Bros. & Barclay—
Vitafer ... 22
Valentine's Meat Juice Co.—
Meat Juice ... Cover iv
Van Abbot & Sons—
Foods for Diabetics and Obesity 54
Van Houten's Cocoa ... 19

FURNITURE, &c.:—
Carter—
Hove Self-Propelling Chair ... 14
Sandown Spinal Carriage ... 14

HOSPITALS (ISOLATION):—
Browne & Lilly—
Revolving Chalets, &c. ... 77

MED. & SURG. APPLIANCES:—
Arnold & Sons—
The New Patent Phonophore Stethoscope ... 8
Bailey & Son—
Patent Belts, Trusses, and Elastic Stockings ... 43
Improved Electric Eye Needle or Spud ... 43
Improved Featherweight Binaural Stethoscope ... 43
Davis—Lukens Sterile Catgut ... 11
Down Bros., Ltd.—
New Operation Table ... 12
Ernst—
Surgical and Orthopædic Appliances, &c. ... 56
Galen Mnfg. Co.—
"Durana-White" Plaster ... 10
Hawksley & Sons—
Knee Trusses ... 55
Hearson & Co.—
Hearson's Specialities ... 14
Hospitals and General Contracts Co.—Instruments, Dressings, &c. 42
Millikin & Lawley—
Osteology, &c. ... 8
Neelie—Dr. Dettweiler's Spitting Flasks ... 11
Original Quartz Lamp Company—
Radiating Quartz Lamp ... 15

MED. APPLIANCES—(Continued).
Robinson & Sons—
Capsicum Gamgee Tissue ... 55
St. Dalmas & Co.—
National Rubber Adhesive Plaster ... 32
Leicester Surgical Strapping 32
Timpson & Co.—
Zo Adhesive Plaster ... 55

MINERAL WATERS:—
Apollinaris Co.—
Apollinaris ... 40
Camwal, Ltd.—
Aerated Lithia Water ... 52
Davis—Hercules Water ... 54
Del Mar—Vittel ... 50
Ingram & Royle—
Glenalbion Mineral Water 49
Vichy-Celestins ... 46
Rubinat-Llorach ... 47
Voigt & Co.—
Wiesbaden Goat-Water ... 52

OPTICIANS:—
Bruce, Green & Co.—
The Wyche Portable Lamp ... 10
Handy Portable Trial Cases .. 10

TAILORS, BOOTMAKERS, &c.:—
Dowie & Marshall—
Hygienic Bootmakers ... 10
Evans & Co.—
Shootoor Jacket, &c. ... 58

TYPEWRITING, &c.:—
Taylor's Typewriters ... 11

VACCINE LYMPH:—
Jenner Institute for Calf Lymph 11
Rebman's Pure Aseptic Calf Lymph ... 11
Renner's Calf Lymph Establishment ... 11
Roberts & Co.—
Chaumier's Calf Lymph ... 11

WINES, BEER, SPIRITS, &c.:—
Ackerman-Laurance—
Brut-Royal ... 52

X-RAY, &c., APPARATUS:—
Ilford, Limited, Ilford—
X-Ray Plates ... 10
X-Ray Films ... 10
Sanitas Electrical Co.—
New X-Ray Apparatus ... 15
Siemens Brothers & Co.—
The Oscillothermex ... 15

MISCELLANEOUS:—
Bowling, Pembroke Dock—
X Ray Coil ... 77
Clayton, Ltd.—
10 h.p. Light Car for sale ... 77
98, Dalyell-road—Microscope ... 77
Goff & Co.—
Suit Cases, &c. ... 55
Maude, Hampton Court—
Invalid Chair ... 77
Patouret, Crosby-on-Eden—
Goats' Milk ... 77
Portman Income Tax Relief Agency ... 76
Young & Co., Southampton Bdgs.—
British Patent 13349 for sale .. 76

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

ADVERTISING.

Books and Publications ... ... } Five Lines and under £0 4 0
Official and General Announcements } Every additional Line 0 0 6
Trade and Miscellaneous Advertisements and Situations Vacant ...

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.
Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.
Special terms for Position Pages.

ABSTRACTS OF

The Milroy Lectures

ON THE

HYGIENIC ASPECT OF THE COAL-MINING INDUSTRY IN THE UNITED KINGDOM.

Delivered before the Royal College of Physicians of London

BY FRANK SHUFFLEBOTHAM, M.A., M.D. CANTAB., J.P.,

MEDICAL REFEREE UNDER THE WORKMEN'S COMPENSATION ACT FOR THE NORTH STAFFORDSHIRE DISTRICT.

LECTURE IV.[1]

MINERS' NYSTAGMUS.

MR. PRESIDENT AND GENTLEMEN,—Miners' nystagmus must be regarded as the commonest of all occupational diseases. This disease was first recognised by Gillett, of Sheffield, about 1854, although no case was mentioned in medical literature until 1861, when the symptoms were first described by De Conde. In 1907 it was felt necessary to schedule miners' nystagmus as an occupational disease under the Workmen's Compensation Act, in order to entitle sufferers to compensation when disabled by it. Dr. J. Court has stated as a result of examination of several thousands of workmen that 35 per cent. of coal getters are subject to this disease to some extent.

Symptoms of nystagmus are most commonly found among miners engaged in holing, a process which consists of cutting the coal seam so as to get out the coal in pieces as large as possible, the holer being on his side with his knees drawn up and his head thrown backwards, and he strikes the coal with a horizontal swing, the lamp being placed near his feet. He may undercut the seam or "top cut" it, but in either case the muscles of the eyeballs are in a continually strained position, and as a result the elevator muscles suffer from strain and cramp. The hewers and the loaders who are working at the face come next in liability to the disease. All observers agree that the workmen who work hardest and who earn the best wages are more likely to be affected than those whose weekly output of coal is smaller.

Miners' nystagmus seldom occurs before the age of 25, and not usually before a miner has worked for ten years underground.

McMurray found that of 120 consecutive cases of miners' nystagmus, 39, or practically one-third, were between 40 and 50 years of age, and 33 between 30 and 40. Between 50 and 60 there were 22 cases. There were two patients under the age of 20, one of whom was suffering from congenital nystagmus, and the symptoms in the second case came on after a severe injury to the head; between the ages of 60 and 70 he had six cases.

Libert, in an analysis of 262 cases, found that 37 per cent. occurred between the ages of 30 and 40, and 31 per cent. between the ages of 40 and 50; 22 per cent. occurred between 20 and 30.

Llewellyn analysed 600 cases, and found that 33 per cent. occurred between the ages of 30 and 40, 29 per cent. between 40 and 50, and 16 per cent. between 20 and 30. The same observer recorded that only 7 per cent. of his cases had worked underground less than ten years, while 33 per cent. had worked between 20 and 30 years.

It would seem that the longer a man has worked in the pit the more likely is he to develop nystagmus. This may be regarded as a general rule which may be applied to all workers up to the time when they have worked 30 years in the pit, after which they do not appear to be so susceptible. The youngest case that has come under Llewellyn's notice was a boy aged 15, and 47 of his cases developed the disease before the age of 25. In McMurray's series of 120 cases 9 of the patients were 25 years and under. The shortest time in which the disease has been known to develop after underground work is five months.

Symptoms.

We must realise at the outset that we are not dealing with a disease localised to the eyes, but with a general disease, one symptom of which is oscillation of the eyeballs. The term "miners' nystagmus" is an unfortunate one, as it simply relates to one symptom, and the nomenclature of this disease has certainly given rise to a great deal of confusion, even among medical men who practise in colliery districts, and who are constantly coming in contact with patients suffering from it. Nystagmus is a symptom which is common to a large number of diseases, among which may be mentioned Friedreich's ataxia, disseminated sclerosis, and some congenital diseases of the eye, and the term was first used by physicians who noticed symptoms of nystagmus commonly associated with children who had nodding heads, hence the derivation of the word from *νύσταξω*, meaning "I nod." The symptoms of this disease, however, are not confined to oscillation of the eyeballs and any effects which may result from this phenomenon. There may be, and generally are, symptoms such as headache, nausea, attacks of giddiness, muscular tremors, twitching of the muscles in different parts of the body, especially the muscles of the eyelids and the face and neck; neurasthenia may be a prominent symptom, with its associated conditions, such as a quickened pulse, exaggerated reflexes, increased vasomotor irritability, sleeplessness, and nervous depression. All these symptoms may be present in any given case of miners' nystagmus, but in many cases some only of the symptoms are present, and at given times the prominent symptom, the oscillation of the eyeballs, may actually be absent, although the patient is undoubtedly suffering from the disease which we know as miners' nystagmus.

The commonest complaint associated with miners' nystagmus is the jumping about or flickering of the lights in the pit or the gas lights on the surface. Those who know what a St. Catharine's wheel is generally compare the sensation to the lights moving round like those wheels. Photophobia is a common symptom of miners' nystagmus, and a large majority of the cases complain that they cannot see at night, and others that the symptoms are worse at twilight. The symptom of night blindness is one of the earliest to be perceived by the sufferer. This is undoubtedly one of the most characteristic symptoms of miners' nystagmus, and it is regarded by Court and Llewellyn as being present in about 75 per cent. of all cases. Among the rarer subjective symptoms are double vision and photopsia. Patients suffering from miners' nystagmus very often complain of nervousness, sleeplessness, and of mental depression. There may be a general facial expression which is common to the neurasthenic, and the patient may also complain of vague shifting aches and pains in different parts of the body. In some cases mental symptoms of a very serious nature occur, and the nervous depression is so great occasionally that the patients have suicidal tendencies.

[1] Abstracts of the previous lectures were published in THE LANCET of June 20th (p. 1731) and 27th (p. 1799), 1914.

Physical Signs.

The most prominent and the most important physical sign is oscillation of the eyeballs. In a typical case the movement of the eyeball is rotatory, rhythmic, and involuntary, but may vary in different patients in direction of movement as well as in frequency; in exceptional cases to-and-fro movements are found as well. All observers are agreed that vertical nystagmus is very rare. While the disease usually affects both eyes, unilateral nystagmus has been observed. I have seen nystagmic movements of the muscular stump after the eye has been removed, and rhythmic oscillations of a shrunken and blind eye. The movements may be different in direction in each eye, and the rate may vary in different patients and in the same patient at different times. In the majority of cases both eyes move at the same rate.

The frequency in ordinary cases is from 100 to 300 oscillations per minute, but occasionally the movements are so rapid that it is impossible to count them. The range of movement varies from 1 millimetre to 1 centimetre, and sometimes the movements are so rapid and the excursion so short that it is impossible to detect the oscillation of the eyeball without the use of an ophthalmoscope. Llewellyn has pointed out that the fine rapid movements are much more constant in rhythm than the coarser movements, which are slower and more irregular. The oscillations are increased by exertion, by excitement, by looking upwards, by rapid movements of the head, by bending the head and raising it quickly, or during the fixation of some distant object; and in cases in which no oscillations are obvious at first on medical examination they may be induced by the same means. Where the miner has been absent from work for a considerable time this procedure may not be sufficient to induce the oscillations, and they can only be made evident by placing the miner in a position similar to that in which he works in the mine, and by asking him to go through the same movements of his arms in a darkened room as he would perform in the pit while at work. The oscillations may be arrested by looking down and resting the eyes, and entirely stopped on strong convergence of the eyes, and they cease during sleep.

Clonic spasm of the eyelids is a common, and in some cases the main prominent, objective symptom. Sometimes it is an early, sometimes a late symptom, and very often it may remain after the oscillation of the eyeball has ceased. Llewellyn has pointed out that the movements of the eyelids associated with nystagmus are of two kinds—the coarse blinking movement and the fine tremor or clonic spasm; and in the former, although the movements may be quick, they are tonic and not clonic. These movements may be exaggerated and made more obvious by adopting the means I have described in discussing oscillation of the eyeballs. The frequency of the clonic spasm and the oscillation of the eyeballs are independent of each other.

In addition to the above two signs we may often find tremors of the facial muscles, of the eyebrows and even of the whole head. Llewellyn found tremor of the head in 27 per cent. of his cases, McMurray found it after exertion to be an almost invariable symptom, and my own experience coincides with that of the latter observer. The muscles of the neck and shoulder may also be affected, and in some cases the spasm of the muscles of the neck may be so pronounced that the head is held backwards and wry-neck produced.

The gait in a typical case of miners' nystagmus is characteristic. The patient endeavours to compensate for his visual defect by throwing the head backwards and keeping the eyes down and walking stiffly. In severe cases the gait may be ataxic and Romberg's sign may be observed.

Vision.

Many observers are of the opinion that some optic defect is one of the principal factors in the production of miners' nystagmus. We may find evidence of old injury to the eye, but a large percentage of cases show errors of refraction. Brown and Mackenzie found such errors present in 90 per cent., astigmatism accounting for 48 per cent., hypermetropia for 27 per cent., and myopia for 15 per cent. From McMurray's series of cases of miners' nystagmus it appears that two-thirds of them have some refractive error, and Folker found 75 per cent. and Llewellyn 83 per cent. in the cases which have come under their observation. Astigmatism of various kinds is the commonest form of refractive error, and hypermetropic cases are more frequent than myopic ones.

Visual acuity is nearly always diminished, even in convalescent cases where there is no oscillation of the eyeballs. Cridland has investigated the field of vision in a series of cases of miners' nystagmus, in nearly all of which the men had been compelled to give up their work on account of the severity of the symptoms. The result of his examination of these cases showed:—

1. That contraction existed for blue, white, and red in practically all the cases examined. 2. The contraction was of the concentric type and symmetrical in shape, although not always in depth. 3. In the majority of cases the colours were in their correct order, but occasionally interlacing of the red and blue occurred, the correct order being recovered as the case improved. 4. The contractions for red and blue were generally greater than those for white, and rather greater for red than blue. 5. By grouping the cases into mild, moderate, and severe types the fields broadly showed corresponding contractions. 6. Speaking generally, as the disease improved the fields of vision improved, but contraction persisted as long as any subjective symptoms were present, and although oscillatory movements could not be elicited by any test. 7. Most of the cases showed more or less marked signs of such symptoms as clonic spasm of the eyelid, twitching of the neck, &c., but there seems to be no direct relationship between the presence and degree of these signs.

Cridland points out that there is a great similarity between the fields in miners' nystagmus and in traumatic neurasthenia, and throws out the suggestion that the alteration in the field of vision in nystagmus cases is of the same nature as that found in traumatic neurasthenia. If we keep in mind the possibility of miners' nystagmus being a neurosis of the same nature as neurasthenia, and that neurasthenia and miners' nystagmus are so often associated in the same subject, and that each may be induced by an injury in many cases, I think we may infer that nystagmus itself should be regarded as a local symptom of neurasthenia.

I have noticed in many cases of miners' nystagmus that when the patient is sitting down and has put his head between his legs for a short time, say a minute or so, on raising his head the eyes not only have the oscillations and clonic spasm, the oscillations being more marked, but there has been a prominent bulging of the eyes, almost bordering on exophthalmos, accompanied by marked injection. I have found this symptom sometimes of the greatest value in doubtful cases.

Onset of the Disease.

In some cases the onset is gradual, and on the average we may say that 12 months may elapse between the appearance of the first symptoms and the time when the patient consults his doctor. On the other hand, in some cases the onset is strikingly sudden, and when it is so it is generally the result of some debilitating illness, such as influenza, or the result of an accident either to the eye or to other parts of the body. The disease may develop in a few months after a miner has worked regularly for 20 or 30 years in the mine without any apparent trouble. When the patient first consults his doctor he may be unconscious of the oscillation of the eyeballs, and he may have no suspicion that he is suffering from miners' nystagmus. He may complain of some of the objective symptoms already described. In another group of cases we may find that the symptoms complained of are purely nervous; the man may tell his doctor that he is simply run down or fearing a nervous breakdown, and symptoms of neurasthenia preponderate to such an extent that miners' nystagmus may be overlooked.

The progress of the disease may depend upon many conditions. Just as illness or an accident may be the cause of the sudden onset of the disease, we find that they may aggravate any form of miners' nystagmus and convert a mild or a latent case into a serious one. If the accident sets up a neurasthenic condition which previously did not exist, the symptoms associated with nystagmus will be still more serious. Excessive drinking or smoking may intensify the condition.

If a miner suffering from this complaint continues in the occupation at which he contracted it the symptoms will in the course of time increase and assume a more serious form. On the other hand, for the disease to be arrested the sufferer must entirely give up work in the pit. The period of recovery will depend largely upon the severity of the symptoms and upon the manner in which the treatment is carried out. Even after recovery relapse is very common, and sometimes under conditions favourable to the aggravation of the disease the patient may have several relapses.

Diagnosis.

It is first of all necessary to decide whether the prominent objective symptoms are due to the nature of the man's employment or not. Nystagmus, or oscillation of the eyeballs, is associated with several diseases of the brain and spinal cord, such as Friedreich's ataxia, syringomyelia, disseminated sclerosis, and tumour of the cerebellum, as well as some congenital diseases of the eye, but the history of the case and the presence of other symptoms should be sufficient to make a differential diagnosis from miners' nystagmus. In all these conditions the movements of the eyeballs or the actual nystagmus are different from those found in miners' nystagmus, in which the movements are much more forcible and rapid, and can be exaggerated much more easily by the methods described.

Clonic spasm of the eyelid is found in many other conditions besides miners' nystagmus; but by systematic examination it is easy, if the other symptoms are considered, to decide in the case of a miner whether the twitching of the eyelids is due to nystagmus. If associated with nystagmus and clonic spasm of the eyelids there are some of the other symptoms to which I have referred, there should be no difficulty in making a diagnosis of miners' nystagmus. It is both important and interesting to know that although nystagmus may be found in the diseases of the brain and spinal cord to which I have referred—Friedreich's ataxia, &c.—in these conditions clonic spasm of the eyelids is never found. In a miner, therefore, who shows the two objective symptoms of nystagmus and clonic spasm one can be certain of the diagnosis of miners' nystagmus.

If no oscillation of the eyeball is observed care is necessary in order to come to a reliable conclusion. Not only may the oscillations be present at some times and not at others, but undoubtedly in some cases of miners' nystagmus no oscillation of the eyeballs is observed at all. In such cases clonic spasm of the eyelids may be the most prominent objective symptom, and if with it headaches, giddiness, muscular tremors, and neurasthenia are found, unaccompanied by any of those conditions which may produce clonic spasm by itself, I think that, apart from the subjective symptoms, the diagnosis of miners' nystagmus is justifiable. Llewellyn points out that it is necessary to exclude cases of high myopia, of which he has seen two examples, as well as such congenital conditions as hereditary nystagmus or albinism.

Causation.

The four most important factors which we have to consider are: (1) defective illumination in the mine caused by the low candle power of the safety lamp; (2) the peculiar cramped position in which miners work, especially the holers and other workers employed at the coal face; (3) the refractive errors found among the miners themselves; and (4) the frequent injuries which miners sustain during their employment, and more especially injuries to the eye itself; but it cannot be said in any case that miners' nystagmus can be caused by any one of these conditions alone, and the real truth probably lies in the fact that the onset of the disease is due to a combination of circumstances. Except at the pit bottom we always find defective illumination in the coal mines of this country; further, in perhaps the majority of cases the men work in a cramped position; refractive errors are at least as common among miners as among other sections of the community, and there is no doubt that miners are by the nature of their employment specially liable to small injuries to the eye, such as abrasions of the cornea. On the surface a worker can see when danger is coming and protect his eyes by means of his eyelids, but in the defectively lighted pit this is impossible. The general feeling at the present time, however, is that the principal factor in the disease is the deficient illumination of the mine, and at the Ophthalmological Congress at Oxford in 1912 it was the unanimous opinion of the members that the principal cause of miners' nystagmus was the poor lighting of the pit.

In the collieries in the Forest of Dean where open lights are entirely used, according to the experience of Sir Frank Brain, only one case of nystagmus has come within the scope of the Workmen's Compensation Act since it became a scheduled disease seven years ago, and in the Black Country where open lights are used to a large extent miners' nystagmus is comparatively rare. In Scotland again, where candles are used to a very large extent instead of safety lamps, nystagmus is much less frequent than in England and Wales. In the

metalliferous mines of this country (not including ironstone mines) where naked lights are universally used miners' nystagmus is an unknown disease, and in the ironstone mines it is very rare.

The candle power of a tallow candle will vary according to the number of candles to the pound, but, roughly speaking, we may say that the candle power of an ordinary naked light varies from 0·75 to 1·5. The candle power of a new Davy safety lamp is 0·2 and of a Clanny 0·68, but these figures are materially reduced when the lamp is in use in the pit. The illuminating power begins to be reduced as soon as the miner commences to work, and slowly and progressively diminishes on account of the dusty atmosphere, and also from the fact that no attention can be paid to the condition of the wick and the inside of the glasses. The candle power of the safety lamp may be materially diminished on account of defective ventilation in the workings, and the difference of candle power between the readings measured in the main intake and the main return may vary to the extent of from 25 to 35 per cent.

The second factor in the production of this disease—the cramped position of the miner while at work—is one to which the late Simeon Snell paid special importance. He believed that nystagmus in miners was a myopathy dependent on the peculiar position assumed by a certain class of men in the mine, and that the position of the miner at his work was the prime and essential cause of miners' nystagmus irrespective of the deficient illumination in the pit. He was under the impression that the disease was practically confined to holers and deputies, and to workers who might be subjected to the strain of the elevator muscles, but observations from every coalfield in England now go to prove that the disease is found to a large extent among other workers in the pit—timberers and datallers, roadmen, as well as those employed in other occupations. In the Forest of Dean and in Somerset, owing to the thin seams of coal, the collier is obliged to assume a more or less reclining position, and if Snell's theory be correct one would imagine nystagmus to be very common in these coalfields, but, as I have already stated, it practically does not exist. On the other hand, according to Elworthy the great majority of the colliers in Ebbw Vale work in the upright position, and nystagmus exists in a considerable percentage of the men employed in this district.

There is no doubt that errors of refraction play a most important part in the causation of miners' nystagmus, and injuries to the eye or general injuries to other parts of the body may be the determining factor in the onset of the symptoms. The personal factor in this as well as in all other industrial diseases must be taken into consideration. Certain workers seem to be specially prone to the complaint, and in some instances an undoubted hereditary tendency to the disease has prevailed.

Prognosis.

Speaking generally, if treatment is conscientiously carried out the outlook is quite favourable. Mild cases recover in the course of a few months if the patient be removed from his work underground, but the symptoms in severe cases may not abate for many years, even when the miner has been properly treated and has not worked under adverse conditions. If the symptoms result from an injury to the eye, or if they are associated with an error of refraction or such a condition as cataract or glaucoma, the prognosis is not favourable, and while the correction of refractive errors does a great deal to shorten the course of the disease, still, when the refractive error is of a high degree, even the correction for this defect may not cause speedy recovery.

When neurasthenia is present to any extent the prognosis is less favourable than under any other conditions. There is a great tendency for patients suffering from this neurasthenic type to look on their future in the gloomiest way, and many believe their working days are over. This frame of mind not only keeps alight the general nervous symptoms, but retards the cure of the eye trouble. Marked interference with the visual acuity, the presence of nystagmus in a plane below the horizontal, muscular tremors of the neck and shoulders, ataxic gait, and Romberg's sign must all be regarded as most serious symptoms, and just as a drinking bout or excessive smoking may hasten the onset of symptoms which will prevent the man from working, so over-indulgence will in these respects cause exacerbation of the severity of the complaint.

When a young miner contracts this disease it may be taken that there is some predisposition to it, and a tendency to relapse should he return to work in the mine; in the case of old men the difficulty lies in the slowness of the recovery on account of age and lessened powers of resistance. In all uncomplicated cases, by which I mean those in which there is no permanent injury to the eye such as a corneal opacity or traumatic cataract, the chances of recovery are greater the sooner the man gives up underground work, and some of the worst cases in Llewellyn's experience have occurred in men who have struggled on with their work in spite of the disease.

Mild cases which have apparently recovered may frequently be followed by a relapse if the patients return to their old employment underground, especially when they are employed at the coal face. Even in miners suffering from this disease who do not go back to their work, and when apparently their symptoms have cleared up under treatment, there may be a relapse after influenza or an injury, or, as has already been indicated, after excessive drinking, and in one case I have known a relapse has occurred after going to a kinematograph performance.

Treatment.

The treatment of miners' nystagmus must be considered under two headings: (1) the treatment to be applied to the sufferer, and (2) the preventive measures which may be employed for the purpose of either diminishing the number of cases or eliminating the disease altogether.

With regard to the personal treatment, this will depend entirely upon the severity of the case. In severe cases it is necessary for the man to give up work entirely and to have complete rest. If the examination of the eye shows any refractive error this should be corrected by means of glasses, and in many cases after the patient has become accustomed to the altered conditions under which the muscles of the eye work he obtains some relief, at all events from such subjective symptoms as headaches, giddiness, and nausea, while in some cases these symptoms disappear altogether. Ernest Clarke has pointed out that in neurasthenic cases the correction of small ocular defects is of the greatest importance, and he believes that in many cases the greatest amount of eyestrain results from the smallest error of refraction.

Neurasthenic symptoms must be treated in the ordinary way, and if the patient be suffering from neurasthenia of a marked degree Weir Mitchell treatment should be advised for a period of from four to six weeks. Sufficient attention has not been paid to the application of Weir Mitchell treatment in cases of nystagmus, and the association of miners' nystagmus with neurasthenia has not been sufficiently recognised. As far as I know Weir Mitchell treatment is only properly carried out in England in nursing institutions, or in perhaps one or two hospitals in London devoted exclusively to the treatment of nervous diseases; but in view of the fact that there are many hundreds of coal miners in the different colliery districts of this country incapacitated for work on account of miners' nystagmus associated with neurasthenia, from an economic point of view it is most desirable that arrangements should be made in the hospital centres of colliery districts to provide the best possible treatment in order to bring about speedy recovery. Convalescent cases derive great benefit from change of air, especially at bracing seaside resorts.

In mild cases and in cases which are convalescent a change of employment on the surface may result in great benefit, because the mind is occupied and the patient is not worrying about himself, and, further, the exercise which ordinary manual work necessitates will do a great deal towards improving the nervous condition. Some writers consider that on recovery the miner may be allowed to work in the pit again, and this practice is prevalent to a large extent in all mining districts, but I think to reduce the risk of recurrence it is advisable to place the man at such work that he is less liable to contract the disease than at his previous employment, but if there be any recurrence after this return to different work then the man should never be allowed to work in the pit again.

During illness it is important that the man should lead a well-regulated life. He should keep good hours and should be abstemious with regard to alcohol and tobacco. With regard to medicinal treatment in cases where the nervous symptoms are pronounced, where the appetite is poor and there is sleeplessness, glycerophosphates and bromides may be given with good results, and among the other drugs which have been found to be successful are strychnine and quinine. Romiée has advised the local application to the eye of eserine drops in a 3 per cent. solution three times a day. Atropine has been tried without success. Operative treatment in the form of tenotomy has been recommended in cases of miners' nystagmus, but in every case, as far as I know, in which an operation has been performed, disappointing results have ensued.

Preventive Measures.

Preventive measures may be considered under three headings: (1) Improvement in illumination of the mine; (2) the extension of the use of coal-cutting machines; and (3) efficient ventilation of the workings.

It has been most conclusively proved that defective illumination of the mine is the most important factor in the production of miners' nystagmus, and if the number of cases of this, the most frequently found of all the industrial diseases, is to be reduced we must look to improved illumination and increased candle power of the miners' safety lamp. Every man on his way to and from the face should be compelled to use a shade at the back of his lamp. In many districts where this has been the custom any man omitting the precaution is at once assailed by his fellow workmen. The dancing of the lamps in front is very trying to all, but it is most serious to a man with nystagmus. The number of coal-cutting machines extends considerably every year, and it is to be hoped that this will have its effect in reducing the number of cases of this disease. It is the general opinion of working miners themselves that bad air in the mine is the exciting cause of this disease; whether this be so or not, there is no doubt that bad air has a deleterious effect upon the general condition of the miner, and as we have seen that impaired general health is a predisposing cause of the onset of the disease, efficient ventilation in the mine is an important factor in its prevention.

McMurray has suggested that all miners should be subjected to a systematic examination of the eyes, so that cases with any refractive error or with any other ocular defect can be prevented from commencing or continuing this kind of work. Undoubtedly such a procedure would greatly diminish the incidence of nystagmic cases, but I question whether the Miners' Federation would consent to the institution of such an examination, as it would mean at the present time dismissal of thousands of miners who have worked in the pit all their lives, and who are continuing to do regular and efficient work, and further, it would mean the constant elimination at each periodic examination of numbers of workers who would be deprived of their means of livelihood, and with little chance of gaining employment elsewhere unless it were in the ranks of the casual labourer. If, however, a periodic examination were made, and the power of dismissal were prohibited in case of any ocular defects other than miners' nystagmus being discovered, then it has been suggested that the workers be induced to wear spectacles when on the surface in the hope that by the correction of the refractive error the symptoms of the disease will be decreased in severity.

Incapacity for Work.

Miners' nystagmus is essentially an industrial disease. In spite of the various theories for the explanation of the symptoms it cannot be denied that the complaint is one which is a direct result of the conditions under which the miner works, and in view of the fact that it is a disease to which the Workmen's Compensation Act applies, it is important to consider to what extent incapacity for work may result from it.

In the first place, I would point out that there is no necessary relation between the objective and subjective symptoms. Cases where the movements are very slight may be accompanied by distressing headaches, attacks of giddiness, and other subjective symptoms, while well-marked oscillations sometimes may cause no trouble. It is difficult to tell whether a miner suffering from nystagmus is incapacitated from work or not, and Dr. A. R. Moody, of Stoke-on-Trent, when giving evidence before the Departmental Committee on Industrial Diseases in 1907 said that it was almost impossible to distinguish between a coal miner who had oscillation of the eyeballs, but who was able to work, and the miner who had the same symptoms and was incapacitated by it, and the only way that he was able to judge was by the past history of the man; and Professor Murray, in his evidence before the same committee, admitted that it was very difficult to disprove the assertions of a coal miner with the characteristic

nystagmic movements of the eyeballs who stated that he was unable to work.

The objective symptoms by themselves may not cause any discomfort or incapacity for work, but when associated with subjective symptoms we may have a case of total incapacity for work. A great deal, however, depends upon the subjective symptoms, for the existence and severity of which we are compelled to trust to the patient's honesty. Meighan has classified the degrees of incapacity for work under three headings:—

1. Those slightly affected—men who suffer to a slight extent from the characteristic oscillations of the eyeballs—especially when they assume positions that strain the muscles of the eye. These men continue work and never become incapacitated. He believes that 5 per cent. of all miners are affected slightly. 2. Those who suffer from the oscillations and feel giddy at times. These should be obliged to leave off the work in which they are engaged. They may require a rest for six months, but should not return to their old employment. 3. Those who suffer badly from oscillations, headaches, giddiness, and other symptoms mentioned previously. These should give up underground work entirely and never return to it.

When the large proportion of underground workers in whom nystagmic movements of the eye can be observed is remembered it cannot be doubted that the disease may cause little inconvenience, but cases of a severe and distressing nature cause total incapacity for work for a considerable period of time. In some instances patients have been unable to do any kind of work, even light work on the surface of the mine, for several years.

It is most important that firemen and deputies who have suffered from this disease should be able to detect the warning blue cap over the flame of the safety lamp before they are allowed to return to their own employment, and it has been suggested that, considering the great responsibility that rests upon them for the safety of the pit, if they have once had the disease and been incapacitated on account of it, they should have their eyes tested once in every three months.

Complete incapacity for work undoubtedly may occur in cases in which nystagmus is absent or has disappeared, but in which clonic spasm and other subjective symptoms of miners' nystagmus are complained of. Giddiness is the most troublesome subjective symptom from the point of view of capacity for work, and even when the other symptoms, whether they be subjective or objective, are only slight, if attacks of giddiness are at all frequent, and come on without any warning, then the patient must be regarded as totally incapable of work, and it is not safe to give him light work, even on the surface of the mine. The capacity for work after a proper course of treatment will undoubtedly depend upon the actual condition of the eye, and one-eyed men who suffer to any pronounced extent from this disease must be regarded as totally and permanently incapacitated for work underground.

Cases of miners' nystagmus in which neurasthenia is a prominent symptom must be regarded as of a severe type, and although the eye symptoms may be not of a pronounced character the nervous symptoms are such as to cause total disability for work. Like all other neurasthenic conditions, this may last for years, unless the patient undergoes a suitable course of treatment, such as prescribed by Weir Mitchell.

Malingering.

All observers are agreed that it is impossible to imitate the nystagmic movements of the eye, so that there can be no malingering with regard to this, the most prominent objective symptom. There is a difference of opinion as to whether clonic spasm of the eyelids can be simulated or not, but careful observation in any given case will easily detect malingering, as it is impossible for the patient to sustain, but for a minute or so, the twitching of the eyelids, and further, the voluntary movements which are induced by a malingerer are altogether different from those which are seen in true cases of clonic spasm of the eyelids. Dr. Moody has pointed out that the movements in the latter case are quicker and finer, and if a miner attempts voluntarily to blink his eyelids quickly he must bring other muscles into play apart from those which actually blink the eyes, and in Dr. Moody's opinion the man will be easily found out. It should be clearly and widely known among all miners who may imagine that the simulation of this symptom is an easy matter that they are entirely mistaken, and that if they try it on before a skilled observer they will be almost immediately found out. We may therefore say that the two principal objective symptoms cannot be simulated, and if a man be known to have attacks of giddiness and to fall about, to be suffering from night-blindness, and, when tested by Cridland's method, from a diminished field of vision, there can be no question as to the genuineness of the case.

The only difficulty may arise in mild cases, where patients are capable of following some kind of employment, such as light work on the surface or in an occupation independent of coal-mining. In many cases miners with a definite oscillation of the eyeballs are able to do their work without any complaint for years in the absence of headache, dizziness, and other subjective symptoms; but if a miner suffering from such a mild degree of the disease suddenly becomes aware of the presence of nystagmus should he, for the purpose of claiming compensation under the Workmen's Compensation Act, desire to make complaints of headache, giddiness, feelings of sickness, and other symptoms for the existence of which they had to trust to his honesty, it would be most difficult to disprove the statements. The examining doctor would have to take into consideration the man's record for work and his demeanour while under observation, and assistance might be given by friends and neighbours who could testify one way or another as to the man's general state of health. In dealing with such cases it is absolutely necessary to make a complete examination of the man and a special examination of his eyes. I believe that a great deal of help can be obtained by paying special attention to the extent to which the field of vision is limited.

There are undoubtedly many cases of miners who know that they are suffering from miners' nystagmus, but who go on working in spite of the complaint, and it is only when they give up work, either on account of bad trade, or a strike, or because of some quarrel with an official or their employer, that they make a claim for compensation. During the coal strike of 1912 many such cases were recorded in different coal districts of this country. In all disputed cases I would suggest that the medical referee under the Workmen's Compensation Act should rely, not only upon his own examination and the reports submitted to him by the medical advisers of the workmen and the employers, but that he also take into consideration either verbal or written statements of workpeople or other persons who can speak as to the man's previous history and his general condition of health.

LECTURE V.

[The fifth and last Milroy lecture dealt particularly with the conditions found among miners, and known as beat hand, beat knee, beat elbow, and beat buttock, and with the relationship between these industrial affections and the Workmen's Compensation Act. After referring to tenosynovitis about the wrist and miners' itch or rash, the lecturer brought his task to a close with a survey of the effect upon the health of miners which has been produced by changes in the laws affecting their industry.]

THE INFLUENCE OF LEGISLATION UPON THE HEALTH OF MINERS.

From the time that coal-mining came to be recognised as an industry in this country laws were passed to regulate it, but they had special reference to the possession of mining property and for the protection of owners against the violence of their workpeople, and it was not until the year 1842 that any legislation was passed that had a direct bearing upon the health of those employed. In this year the employment of female labour underground was forbidden, and regulations were made to improve the conditions of the boys who were engaged in underground workings. From this time onwards many Acts of Parliament have been passed with the object of improving the conditions of labour and in this way bettering the health of the workers. In 1850 the law provided for the inspection of coal mines; inspectors were appointed by the Home Secretary, and were given power to enter and inspect the works of any colliery, both above and below ground, and to inquire into all matters relating to the safety of the persons employed. For the first time it was made necessary that notices of accident causing loss of life should be sent within 24 hours to the Home Office, and it was made incumbent upon the owners of pits to provide proper plans of the workings and to maintain them in an accurate condition. Subsequent legislation provided for improved ventilation of the workings and that all pits should have two exits.

The laws with regard to the regulation of coal mines were revised and consolidated in the Coal Mines Regulation Act, 1911, which makes special provisions for increased protection for the workmen by a more systematic method of timbering, by regulations which control the use of electricity in the mines, the use of explosives and the methods of firing shots, and mitigate the risk of haulage and shaft accidents. Provision is also made for improved ventilation in the mine; working places where firedamp is present to a greater extent than 2·5 per cent. are deemed to be dangerous, and it is not permissible for men to be employed in an atmosphere charged with firedamp to this extent. Steps have to be taken for the prevention of coal dust. It is now necessary for all colliery owners to provide a sufficient supply of ambulance requisites at convenient places in the mine, and the organisation of rescue brigades is compulsory in all the colliery districts, not only for the purpose of saving life in cases of explosions, but in recovering the bodies and helping to put into proper order working places that have been destroyed by the explosion. Facilities have been increased for investigating a mine after an explosion owing to the fact that it is now incumbent upon colliery proprietors to be able to reverse the ventilating current by means of their machinery on the surface. It is now also necessary for coal-owners to provide proper sanitary conveniences for the use of the men near the pit bottom and at central places along the roadways, and a clause in the Act enables the workpeople to be provided with baths and washing accommodation on the surface, the cost being defrayed jointly by the employers and the workmen.

The time has yet been too short to appraise the benefits of this Act of Parliament, but as far as legislation goes it is certainly a great step in the right direction. But the occurrence of accidents and the prevalence of disease peculiar to the coal miner do not depend altogether on conditions legislation can effect. The long death roll year by year and the tremendous number of non-fatal accidents are in some instances, perhaps a large number, due to the fact that the human factor enters into these occurrences. Just as it is impossible to free a nation from drunkenness by Act of Parliament, so it is, and will be, impossible to free the collier's life from risk of injury. Carelessness or callousness on the part of either the workman or his employer may result in the greatest disasters, and it is a significant fact that if the number of deaths and non-fatal accidents be estimated, not as a percentage of the total number employed, but in relation to each million tons of coal brought to the surface, we find that in the last 10 or 12 years no improvement has taken place in this respect.

Suggested Measures.

Time will show what effect the Act will have upon the health of the miners, but even if the results are as disappointing in the future as they have been in the past, we should not regard ourselves as at the end of our resources. Something must still be done to reduce the yearly death roll and the large number of non-fatal injuries. It might be necessary to have a more thorough and systematic inspection of mines in order that all the provisions which have been made with the object of diminishing these accidents should be strictly observed so as to reduce the number of falls of roof, haulage accidents, and the various other accidents which at the present time are regarded as incidental to the miner's daily work, and to see that the law is carried out to the very letter.

It may be necessary to consider whether the modern mining engineer, who has the sole management and control of any given pit, is sufficiently trained in modern scientific methods to deal with all the problems with which he may be brought into daily contact. Medical men are inclined to believe that their own profession covers as much ground in the realms of knowledge as any of the other learned professions, if not more; but the mining engineer is daily brought in contact with problems of geology, of chemistry, of physics, of engineering, of electricity, as well as of the commercial side of his business. Perhaps the time has come for the heads of the mining profession to realise that specialisation in mining may be the means, not only of working the pits to a greater financial benefit, but also of diminishing to a very large extent the number of injuries which daily take place. Greater advantages should be taken of the facilities for special training given at such Universities as Birmingham and Sheffield, and it seems incredible that, in view of the importance of the profession of mining engineering, comparatively so few students pass through these institutions for the purposes of

graduation, although I am happy to say that the numbers now increase year by year.

We have seen that the only hope of diminishing the number of cases of miners' nystagmus is by improving the illumination of the mines, and in my opinion it should be obligatory on colliery owners to supply better illumination along the roadways and at the working face so that the incidence of this disease in the future shall be materially diminished. Expense will be undoubtedly incurred by the inauguration, say, of electrical lamps in addition to the ordinary safety lamp, but I am confident that the owner will be well repaid for his money, not only by the improved health conditions of the workers, but also because the men will be able to see what they are doing, and it is obvious that they can do their work very much better in a good light than in the wretched light to which they are subject at the present time.

Great Britain is the only European country in which there is no legislation to regulate the temperature at which men work in coal mines, and I think that this country should be brought into line with the other principal European countries, and employment forbidden in workings where the wet-bulb thermometer reading is so high as to be injurious to health. I am not going to lay down what the limit shall be. That should be a matter for full consideration, but when we realise that the Lancashire weaver, the Staffordshire potter, and the colliers in France, Germany, and Belgium are protected against working in temperatures recognised to be injurious to the health, I do not think it is unreasonable to suggest that legislation should do at least as much for the coal miner in this country.

I believe that the law should provide for a compulsory medical examination of all applicants for work in mines who have been in the tropics or in the colonies, or who have worked in European mines, or even in the tin mines of Cornwall, where ankylostomiasis may prevail. It is only from such sources that the coal mines of this country can be infected, and every means should be taken to prevent any infection ever occurring.

CONCLUSION.

So much for legislation. Something further can be done, and that by the medical profession. It seems strange that industrial diseases should have been neglected in the medical schools of this country and by the vast majority of the leaders of the profession, and that the researches in this branch of medical science have been left to individual effort. There are thousands of medical men working in the industrial districts of England who have never received any training in the medical schools on the diseases which they may be called upon at a moment's notice to diagnose and to treat. Young medical men who go straight from the hospitals to practise in these districts undoubtedly fail in many instances to realise what these industrial diseases are, and their experience, the experience of all medical men in those districts, is gained at the expense of the patient. I think that a great deal could be done to improve the health conditions of coal miners, and other workers too, if instruction were given at the universities and medical schools in this important branch of medical science. When we think of the tens of thousands of pounds that have been expended in this country upon tropical diseases (with very good results) we cannot but realise how industrial diseases have been neglected, and feel how imperative it is that this matter should have greater attention, and that young men who know that they are going to practise in these industrial districts should have opportunities of making themselves conversant with those diseases and conditions with which they will be brought into daily contact.

MEDITATIONS ON 1000 CONSECUTIVE ABDOMINAL OPERATIONS AT THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM.[1]

BY ARTHUR E. GILES, M.D., B.SC. LOND., F.R.C.S. EDIN.,
GYNÆCOLOGIST TO THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM; SURGEON TO THE CHELSEA HOSPITAL FOR WOMEN.

IN October, 1913, I did my 1000th abdominal operation at the Prince of Wales's General Hospital; and it has seemed to me that some useful and interesting information might be derived from a study of these cases. To present an exhaustive report upon them would carry me far beyond the limits suitable for this paper, and I have therefore chosen to offer you some reflections or meditations on certain practical matters and to place before you a few figures derived from an analysis of the cases. The following is an analytical table showing the nature and number of the various operations:—

TABLE I.

Nature of operation.	1st 500.			2nd 500.			Total.		
	Number of cases.	Number of deaths.	Per cent. mortality.	Number of cases.	Number of deaths.	Per cent. mortality.	Number of cases.	Number of deaths.	Per cent. mortality.
Ovariotomy	82	3	3·6	83	3	3·6	165	6	3·6
Salpingo-oöphorectomy for tubal disease	94	6	6·4	60	6	10·0	154	12	7·8
Salpingo-oöphorectomy for extra-uterine pregnancy ...	39	1	2·6	26	0	0	65	1	1·5
Hysterectomy for fibroids ...	92	4	4·3	116	3	2·5	208	7	3·3	
,, ,, carcinoma	11	1	9·1	26	0	0	37	1	2·7
Myomectomy	18	0	0	12	0	0	30	0	0
Hysteropexy for displacements	99	2	2·0	123	1	0·8	222	3	1·6
Total gynæcological operations	435	17	3·9	446	13	2·9	881	30	3·4
Exploratory cœliotomy (carcinoma)	16	2	12·5	10	1	10·0	26	3	11·5
Exploratory cœliotomy (inflammatory)	15	3	20·0	9	0	0	24	3	12·5
Bowel operations	15	1	6·6	9	1	11·1	24	2	8·3
Kidney operations	2	0	0	0	0	0	2	0	0
Radical cure of scar hernia ...	14	0	0	19	0	0	33	0	0
Miscellaneous operations ...	3	3	100	7	2	28·5	10	5	50·0
Total non-gynæcological operations	65	9	13·8	54	4	7·4	119	15	10·9
Total operations	500	26	5·2	500	17	3·4	1000	43	4.3

To show the way in which the work has steadily increased and the results have steadily improved I

[1] A paper read at the North-East London Clinical Society on March 5th, 1914.

will give the figures for successive two-yearly periods from the time when the department was founded to the end of 1913.

	Cases.	Deaths.	Percentage mortality.
1900–1	38	2	5·2
1902–3	100	8	8·0
1904–5	122	9	7·3
1906–7	107	3	2·8
1908–9	207	8	3·8
1910–11	232	9	3·8
1912–13	219	4	1·8

Chart I. shows these figures in a graphic fashion. In the first seven years there were 305 cases with 20 deaths, a mortality of 6·5 per cent. In the last seven years there were 720 cases with 23 deaths, a mortality of 3·2 per cent.

Mortality of Abdominal Operations.

Our first meditation may very well be on this important subject. The table of cases shows that there was a marked drop in the mortality of the last 500 as compared with the first 500, the percentage being 3·4 in the later series and 5·2 in the earlier. The improvement may be attributed to three principal causes:—

1. The personal factor of experience. It is not necessary to emphasise this because it is self-evident; nor can any credit be claimed for it because the irreducible minimum required of a man is that his work should improve with increasing experience.

2. A higher standard of asepsis. With succeeding years we have come nearer to the ideal standard; and when I say "we" I include not only the operator and assistant but also the nursing staff in the theatre and in the wards. I venture to say that the better results of late years are in some measure due to the scrupulous care exercised by the theatre sister in carrying out the sterilising work of the hospital and to the devoted care of the sisters of my ward. Another factor in the improvement of asepsis has undoubtedly been the building of the present operating theatre with its more adequate sterilising equipment. Some of you may remember the old theatre with its dust-collecting rafters and its unhygienic walls. The first operation in the new theatre was performed by Dr. Hooper May on June 1st, 1906. If we divide the operations under consideration into two groups, the first from 1900 to June, 1906, and the second from the latter date to the end of 1913, we have these rather significant figures. Before June 1st, 1906, 282 cases, 20 deaths; mortality, 7·1 per cent. After June 1st, 1906, 743 cases, 23 deaths; mortality, 3·1 per cent. I do not claim, of course, that the new theatre alone brought about a saving of 4 per cent. in the mortality, but I feel certain that it contributed to this good result.

3. Improved technique. Year by year sees some improvement in this direction, and the sum of small improvements would make a striking total if it could be appraised. I will mention only two, which have, in my opinion, had a very beneficial effect. The first is the systematic use of gloves during operations. There is no doubt that formerly the presence of a septic case, either in the course of a day's operating or even in the wards, was a source of grave danger to other cases; infection was probably carried by the hands in spite of careful washing and disinfecting. Even now I should put off an operation of election following a case that had unexpectedly proved septic; but an operation of urgency could be undertaken in these circumstances with little fear of bad results. The second point of technique is the introduction of the iodine method for the preparation of the skin in the area of the operation. If this has not directly affected the mortality I feel sure that it has lessened the tendency to post-operative febrile conditions. I may add that the expense of gloves has been amply justified, not only from the point of view of humanity but also from that of economy, because cases do not suppurate as they did formerly, and therefore there has been a great saving in the cost of dressings.

A few words as to the mortality of individual groups of cases. In the table I have divided the operations into two main classes, the gynæcological and the non-gynæcological, the latter coming partly into the domain of general surgery. Here one cannot expect such good results, because the cases include dangerous acute conditions and inoperable carcinoma, and it will be seen that the mortality of this class is 10·9 per cent. for 119 cases. In the gynæcological class the mortality is 3·4 per cent. for 881 cases, and here it will be observed that the group of cases with the highest mortality is that of tubal disease, where it is 7·8 per cent. Many of these cases are, of course, septic to start with. Ovariotomy and hysterectomy for fibroids both show a mortality of something over 3 per cent.; 20 years ago hysterectomy had a much higher mortality than ovariotomy; now its mortality is rather less, and in the later series of 116 cases it was 2·5 per cent. We may expect the mortality of hysterectomy to improve still further, and in support of this view I may mention that there has been only one death in the last 100 cases at the hospital. It is likely that the mortality of ovariotomy will not diminish to the same extent, because the complications of ovarian tumours are liable to be even more inherently dangerous than those of fibroids; moreover, the group of ovariotomy includes some cases of ovarian carcinoma where the operation proves to be of a desperate character, and is only carried through because the removal of the growth offers at least a small chance of life, whilst the alternative to removal means certain death. Extra-uterine pregnancy shows one fatal case out of 65, a result that is very gratifying when we reflect that without operation a large number of these unfortunate women would be doomed to speedy and certain death. Hysterectomy for carcinoma shows a mortality which is perhaps as low as one can expect in view of the formidable character of some of these operations. All the cases of Wertheim's operation of carcinoma of the cervix recovered. Myomectomy had, happily, no mortality. With hysteropexy the mortality should certainly be *nil*; two cases succumbed to pneumonia, and one to an acute oral sepsis. I shall refer to the mortality again in speaking of individual groups.

Age-Incidence.

A study of the ages of patients in different groups brings out some points of interest. I have analysed the ages in 847 cases where the data were available, and the results are shown in Table II.

The graphic method of expressing figures is always more striking and convincing than the tabular method, and I have constructed Chart II. to bring out the facts in the above table. In each group the cases were divided into five equal sections according to their age, and the average age in each

TABLE II.—*Showing the Ages of Patients in Different Operation Groups.*

	Ovariotomy.		Tubal disease.		Tubal pregnancy.		Myomectomy.		Hysterectomy, fibroids.		Carcinoma cervix.		Carcinoma body.		Hysteropexy, retroversion.		Hysteropexy, procidentia.	
	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.
Under 20	5	3·0	5	3·9	—	—	—	—	—	—	—	—	—	—	2	2·0	1	0·8
20–29	32	19·4	46	36·0	33	50·8	2	6·7	2	1·0	1	6·0	—	—	42	42·0	12	9·8
30–39	60	36·3	58	45·3	28	43·1	13	43·3	48	24·0	4	23·5	—	—	42	42·0	44	36·1
40–49	38	23·0	19	14·8	4	6·1	12	40	113	56·5	4	23·5	5	25·0	14	14·0	34	28·0
50–59	21	12·8	—	—	—	—	1	3·3	32	16·0	5	29·4	8	40·0	—	—	18	14·7
60 and over	9	5·5	—	—	—	—	2	6·7	5	2·5	3	17·6	7	35·0	—	—	13	10·6
Total	165	100·0	128	100·0	65	100·0	30	100·0	200	100·0	17	100·0	20	100·0	100	100·0	122	100·0
Average age	39		32		30		40		44		48		55		32		42	

section was ascertained. Thus in the ovariotomy group, with 165 cases, the average age of the 35 youngest is given in Section 1; the average age of the next 35 youngest is given in Section 2; and so for each section. In the group of hysterectomy for fibroids each section has 40 cases; in the group of carcinoma of the body of the uterus each section has only 4 cases.

It will be seen that there is a good deal of variation in the range of ages; thus ovariotomy and hysteropexy for procidentia show a difference of 31 years between the youngest average and the oldest. The actual range of ovariotomy was from 9 years, the youngest, to 68 the oldest—that is, a range of 59 years. That of hysteropexy for procidentia was from 19 to 69, a range of 50 years. The range of carcinoma of the cervix is 31 years on the averages; actually it was 53 years, the youngest being 28 and the oldest 81. Carcinoma of the body has a definitely smaller range than carcinoma of the cervix, and the age rules higher. It is a striking fact that carcinoma of the uterus commencing after the menopause is much more likely to attack the body of the uterus; but when it commences in the child-bearing period it is much more likely to attack the cervix. Incidentally I may remark that the younger the patient the worse the prognosis; and this for two reasons. The first is the fact just brought out, that cervical carcinoma occurs on the average in younger women than body carcinoma; and the chance of recurrence is much less in the latter group. The second reason is that carcinoma of the cervix is apt to run a more rapid course in younger women, and recurrence is more liable to occur in their case.

Extra-uterine pregnancy shows the youngest age-line, its incidence being necessarily within the child-bearing period. Only 4 cases out of 65 were over 40, and 60 per cent. of the cases ranged from 23 to 27. Tubal inflammatory disease is another group with a low age-incidence; this group also coincides with the child-bearing period, and 40 per cent. of the cases were under 30. This point has more than an academic interest; the significance of it is that gonorrhœa, which is responsible for about 95 per cent. of cases of tubal disease, attacks young women usually either before or just after marriage; many cases no doubt clear up, and the patient is able to become pregnant subsequently, but in many others, as shown by the 154 cases of tubal disease operated upon, the disease spreads up to the tubes and the woman's chances of child-bearing are irretrievably destroyed. Some of these women die from septic infection, and, as we have seen, this group is attended by a heavier operative mortality than any other. Nevertheless, operation restores many of them to health, but it does not bring about the fulfilment of their dreams of happy motherhood; it does not restore that married happiness which the presence of children in the home alone can bring; it does not prevent the declining birth-rate, of which gonorrhœa is so important a factor, and the consequent loss of citizens to the State. These considerations are well worthy of the careful attention of those who are earnestly endeavouring to wage an effectual fight against venereal disease; and whilst the common sense of the British race will probably save us from fantastic legislation on eugenic marriages, we may yet hope that an enlightened public opinion will bring about two important measures for the prevention of the spread of disease. The first is the proper control of those great disseminators of disease, the public prostitutes; and the second is the development of such a sense of honour that no man who has contracted any disease will contemplate marriage until he can be assured by a competent medical authority that it is safe for him to do so. Further, if the parents or guardians of girls who are about to marry were to take such a serious view of their responsibilities that they exacted from the prospective bridegroom a satisfactory assurance, backed up if necessary by authoritative medical opinion, of his freedom from venereal disease, such a precaution could not be regarded as quixotic.

The age-incidence of fibroid tumours is fairly wide, though not so wide as that of ovarian tumours. The youngest section averaged 33 years of age; the oldest averaged 56. The youngest patient in this series was 28, and the oldest 65. Retroversion of the uterus has much the same age-range as tubal disease; and unless complicated by prolapse or procidentia it does not occur after the menopause, or at least does not cause symptoms calling for operative treatment.

Observations on Individual Groups.

Ovariotomy.—165 cases, 6 deaths, mortality 3·6 per cent. Every kind of ovarian tumour was met with in these cases: multilocular cystic adenoma; papilloma; dermoid, unilateral and bilateral, and including some of the relatively rare cases of dermoid contents in multilocular tumours; parovarian cyst; blood cyst (lutein hæmatoma);

CHART I.

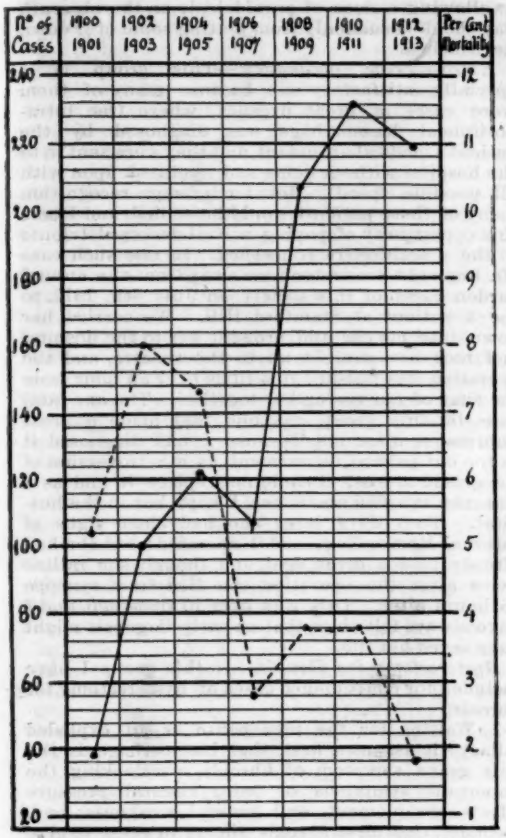


Chart showing abdominal operations (continuous line) and mortality (interrupted line) for 14 years at the Prince of Wales's Hospital, Tottenham. Cases presented in two-yearly periods.

CHART II.

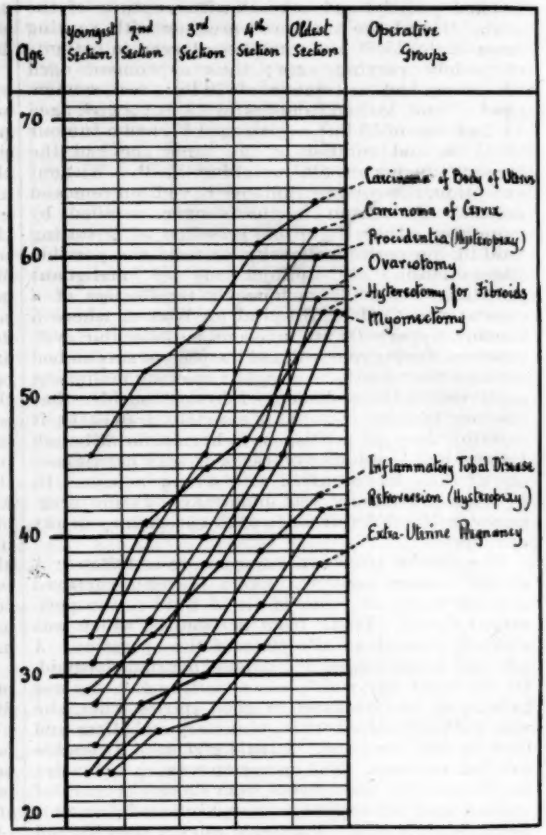
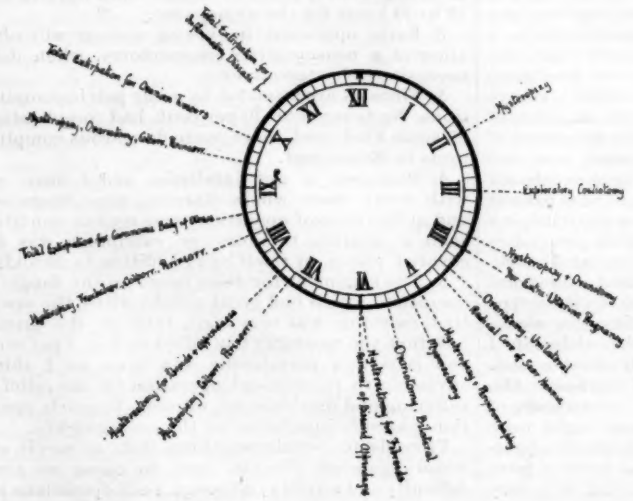


Chart showing ages of patients in various groups of operations. In each group cases are divided into five sections by age, average age in each section being shown.

CHART III.



An "operation clock" constructed on a graphic representation of the figures given in Table III. Wertheim's operation, hysterectomy for carcinoma of the cervix, is off the clock, the average time occupied being over an hour and a quarter. The two operations coming next in length are, as might be expected, total extirpation for inflammatory disease (52 minutes) and total extirpation for ovarian tumours (49 minutes). At the other end of the scale a simple hysteropexy averages 10 minutes, and exploratory cœliotomy (which often includes the swabbing out of quantities of fluid) 15 minutes. Other operations occupy an intermediate position.

fibroma; carcinoma; and sarcoma. There were a good many cases with acute symptoms due to twisted pedicle, and several with rupture of the cyst. Many large tumours were met with varying from 10 to 15 lb. and some even larger, in patients of widely varying ages; thus a woman, aged 57 years, had a tumour of 20 lb.; two women, aged 37 and 38, had tumours of 19 lb.; a girl, aged 19, had one of 16 lb.; a girl, aged 17, had a tumour of 15 lb; and another of the same age had the largest tumour of all, weighing 31 lb. Without exception, these large tumours have been removed entire. My reason is the danger entailed by puncture, either from the presence of irritating fluid in the peritoneal cavity, or from the possible dissemination of papillomatous or malignant growths. I have a melancholy recollection of a case at the Chelsea Hospital for Women where a tumour, apparently an innocent multilocular cyst, ruptured during removal, and the patient succumbed within a few months to a rapidly growing malignant papilloma in the abdomen. I do not consider that the long incision required is a serious drawback; it certainly does not predispose to hernia, for although I have had a number of cases of scar hernia, not one of them has occurred with a long incision. In 8 cases ovariotomy was undertaken during pregnancy, without disturbance of the pregnancy in any of them.

The deaths after ovariotomy were as follows: A single woman aged 41. Came in with ruptured ovarian cyst; 18 pints of viscid fluid in the peritoneal cavity. Death from peritonitis, which was already present at the time of the operation. A married woman aged 34; double ovarian dermoid. On the tenth day, which was a visiting day, she was talking to her husband, in good spirits, when she was suddenly seized with pulmonary embolism and died in half an hour. A little girl aged 9; double ovarian sarcoma. The operation was an extensive and formidable one; death from shock. A married woman aged 52; suppurating and infected dermoid; death from sepsis. A married woman aged 27, and another aged 42; both cases of extensive ovarian adeno-carcinoma; both succumbed to shock.

Tubal inflammatory disease.—These cases varied from simple salpingo-oöphoritis with occlusion of the tubal ostium, and hydrosalpinx to pyosalpinx of the most acute type. Several were cases of tuberculous pyosalpinx; one of them, who had also tuberculous disease of the spine, succumbed to a rapidly active tuberculosis. Another left the hospital apparently fairly well, but she died from rapid miliary tuberculosis shortly after. I have been led to give a guarded prognosis in cases of tuberculous pyosalpinx, because although most of them do very well and get quite cured, now and then the operation seems to light up a relatively dormant systemic tuberculosis, and the patient may die quickly. In several cases a pyosalpinx that had evidently been present during pregnancy became active as the result of anatomical disturbances during labour, and simulated puerperal septicæmia; one remarkable case of this type came in with an acute left pyosalpinx two weeks after delivery, and on opening the abdomen I found a septic thrombosis of the left ovarian vein, which I dissected up for about 4 inches. She died from sepsis some days later. Altogether, of the 12 deaths in this group of cases, eight were from sepsis; one was the case of tubercle above-mentioned, one died from syncope from a fatty heart, one died on the table at the end of a very severe operation, and one developed maniacal symptoms after the operation, and while she was swallowing a dose of paraldehyde on the eleventh day she died suddenly from getting some of it down her trachea.

Extra-uterine pregnancy.—This group is a specially satisfactory one because many of them were cases of great urgency, where free intra-peritoneal hæmorrhage was diagnosed by the patient's medical attendant, and they were sent in to the hospital without delay and operated upon with all possible speed. But for prompt recognition many of these patients would have died, and I take this opportunity of paying a well-deserved tribute to the practitioners concerned. In one such case Mr. Reginald Brown took me away from the annual garden party of this society on July 4th, 1912, to see a patient at Stamford Hill. We carried her down into my car and brought her to the hospital and took her straight up to the theatre, and the operation was finished in a little over an hour from the time of our seeing her together. The one fatal case in this group was one that made a great impression upon me, because I had diagnosed it in the out-patient department as a retroversion of the gravid uterus. I could not replace it, and as I was not satisfied about her I kept her in the hospital. Four days later she had clear signs of internal hæmorrhage and I operated; but she had already bled a great deal, and though she rallied twice after the operation she died from syncope 36 hours after. This was over 10 years ago, and I have always felt since that an early diagnosis might have saved her life.

Hysterectomy for fibroids.—In this group I have included for convenience cases of hysterectomy for fibrosis.

1. Waiting for the menopause is an exploded fallacy; it assumes, first, that hæmorrhage is the only grave symptom of fibroids, overlooking the important symptoms of pain, visceral pressure effects, disablement, and general weakness; and, secondly, that most fibroids shrink or cease to give trouble after the menopause, which is far from being the case. As a matter of fact, out of 575 abdominal operations for fibroids, up to last July, no fewer than 104, or 18 per cent., required operation after the age of 50; and as fibroids may occur in young women some of them would have to wait 10 to 30 years for the menopause.

2. Early operation in young women will often allow of a conservative myomectomy, when delay necessitates hysterectomy.

3. Fibroids are attended by many pelvic complications. No fewer than 70 per cent. had complications of some kind, and there were dangerous complications in 30 per cent.

4. Diagnosis is not infallible, and I have met with many cases where fibroids were diagnosed, and at the time of operation some serious condition such as ovarian tumours or carcinoma was discovered, either by itself or in addition to fibroids.

5. The argument for delay based on the danger of operation, which had great weight when the operative mortality was very high, falls to the ground now that the mortality has fallen to 2 or 3 per cent., and it is now permissible and even, as I think, advisable to recommend operation for the relief of suffering and disablement, whereas formerly operation was only justifiable for the saving of life.

Fibroids in certain positions, such as cervix and broad ligament fibroids, used to cause us great difficulty and anxiety; although such operations are

still difficult ones they have become much simpler since we have understood the plan of incising the peritoneum over the tumour and shelling this out more or less completely. This procedure allows us to lift the tumour out of the pelvis and to reach the uterine vessels with comparative ease.

Fibrosis is a condition that was very little understood until recent years, and even now its pathology is not quite clear. It is a condition in which the normal musculature of the uterus is largely replaced by fibrous tissue; consequently the contractile power of the uterus, which is such a potent factor in arresting hæmorrhage, is practically lost, and drugs cease to have any influence in promoting such contraction. At the same time the mucosa of the uterus becomes atrophic. The typical fibrotic uterus is usually small; on section its walls are hard and fibrous and hardly any mucosa is seen. Curetting, of course, has no effect, as practically nothing comes away with the curette; and, indeed, the failure of this operation is sometimes the feature of the case that leads to a correct diagnosis. Such a uterus is quite useless, and hysterectomy gives brilliant results in the restoration of these patients to health.

Of the 7 fatal cases 2 died from sepsis, one in 1901 and 1 in 1906. I need hardly say that at the present day we should regard these as preventable deaths. Two died from heart failure, one 15 hours after operation, the other on the seventh day. This will always remain a source of anxiety with patients who have lost a great deal of blood, because with many of them one cannot delay the operation to allow them to recuperate because of the danger of a return of perhaps even severer hæmorrhage. One died from broncho-pneumonia on the fourth day. From time to time I have lost several patients from this cause; and meditation thereon has led me to a much greater caution in operating on patients with chest symptoms. When there is any tendency to bronchial trouble I always postpone the operation, even at the risk of causing the patient great disappointment; but, as I tell them, it is much better to disappoint them than to expose them to an unnecessary danger. One case died from pulmonary embolism on the twelfth day; this is one of the dangers of which at present we have no forewarning, and therefore we are not able to guard against it. Fortunately it is not very common, but I had two deaths from this cause among my 1000 cases. The last death was from secondary hæmorrhage, in a very remarkable case. At the time of operation the large fibroid uterus had an attachment, an inch in diameter, to what appeared to be an enormously enlarged liver; the secondary hæmorrhage was from this site, and at the necropsy the large mass proved to be a huge pedunculated fibroid, with intimate vascular attachments to the transverse colon.

Hysterectomy for carcinoma.—The experience of these cases has led me to the conclusion that the most favourable position in the body in which carcinoma can occur is the body of the uterus, because recurrence after hysterectomy for such a condition is exceedingly rare. On the other hand, recurrence is rather distressingly frequent in cases of carcinoma of the cervix, even when the removal is effected by the most radical means at present known—namely, the procedure called "Wertheim's operation." There are two distinct types of carcinoma of the cervix: one is the so-called epithelioma which arises on the vaginal aspect of the cervix in the squamous epithelium, and when extensive gives the appearance described as a "cauliflower growth." If the growth has not invaded the vaginal walls to any great extent, complete removal is relatively easy and the prognosis is correspondingly good. The other type is the glandular carcinoma, which arises in the cervical glands; it is a treacherous condition, because it is apt to grow extensively within the cervix before it makes its presence known, either by symptoms or by physical signs; and it is specially prone to invade the base of the bladder and the broad ligaments. Some of these cases lead to great anxiety and responsibility in deciding whether or not one should attempt the radical operation; and the difficulty is accentuated by the fact that one cannot always determine how far the bladder is involved until one opens the abdomen and attempts to strip the bladder down from the cervix. My present view is that in bad cases it is not worth while to attempt a radical operation; the operative risk is greatly increased by the danger of injuring bladder or ureters, and the chances of recurrence within a year are very great. On the other hand, thorough scraping away of the growth, followed by the packing of the cavity with gauze soaked in a saturated solution of chloride of zinc, will often lead to the prolonging of life, in relative comfort, for a year or longer. In all I have done 23 cases of Wertheim's operation, and the fact that they have all recovered [2] does not blind me to the possibility that one may at any time have a death after the operation. The one fatal case in this group was a carcinoma of the body of the uterus; the patient died 48 hours after the operation, and the cause of death, as determined by necropsy, was syncope from fatty heart.

Myomectomy.—This operation is to be regarded as the alternative to hysterectomy in certain cases. Meditation on these cases has led me to formulate the indications for myomectomy briefly as follows.

1. It depends on the position of the tumour. Pedunculated subperitoneal fibroids can usually be dealt with in this way, and some cases of pedunculated intra-uterine fibroids. An intramural fibroid can often be enucleated if desired.

2. It depends on the number of the tumours. When only one is present, and sometimes with only two or three, it may be advisable to do a myomectomy. With multiple fibroids myomectomy only leaves a maimed and useless uterus.

3. It depends on the age of the patient. In a young woman, particularly if she is married and anxious to have children, one may make very special efforts to save the uterus by doing a myomectomy; in older women, and when childbearing is practically out of the question, hysterectomy is nearly always a better operation. There were no deaths in this group.

Hysteropexy.—The best comment that I can make on this group is in the words of Scripture, "By their fruits ye shall know them." From time to time my attitude with regard to these operations has been criticised, and the main criticism has been that I operate too often. I must admit that I am unrepentant, and shall continue to be so as long as the results continue as satisfactory as they have been up to the present time. If patients can be cured of their displacements, whether retroversion, prolapse, or procidentia, by operation; if they can be saved the discomforts and drawbacks of prolonged pessary treatment; if the uterus remains

[2] The last case operated upon died from pneumonia five days after the reading of this paper.

permanently in good position in the vast majority of cases; if the operation in no way interferes with subsequent pregnancy and confinement (and I have now records of 66 confinements to prove this point); if the satisfactory results of operation cannot be obtained by other means; and if I continue to receive from patients and their medical attendants assurances that the patients have experienced the greatest benefit from the operation; and if, finally, I continue to be convinced, as I am at present, that all these suppositions are borne out by experience and by careful study of after-results, so long shall I continue to advocate and to practise the treatment of displacement by operative measures in suitable cases.

Non-gynæcological operations.—Lengthy comment on these cases is unnecessary. Twenty-six of them—namely, the operations on bowel and kidneys—belong to the domain of general surgery; some of these were operated upon with the expectation of finding other conditions; the rest were special cases in which I was interested, and in which I was allowed, by the courtesy of my surgical collegues, to overstep the usual limits of my "sphere of influence." The cases of scar hernia fell naturally to my lot, as having been responsible in most cases for the primary operation. I have already stated that the most important predisposing cause of this troublesome occurrence is long continued drainage; but in many of these cases one is glad enough to save the patient's life at the cost of such a complication. Another predisposing factor is the condition of flabby abdominal walls in very fat women. The cases of exploratory cœliotomy have caused me to meditate sufficiently to supply material for a separate paper; therefore, as I have still several points to refer to, I will not embark on the subject here.

TABLE III.

Nature of operation.	Number of cases.	Average duration of anæsthesia.	Average duration of operation.	Shortest anæsthesia.	Longest anæsthesia.
		min.	min.	min.	min.
Ovariotomy, single	39	32	22	15	60
„ double	21	38	28	25	90
„ „ with hysterectomy	4	59	49	45	80
Salpingo-oöphorectomy for tubal inflammation	36	40	30	25	65
Salpingo-oöphorectomy for tubal inflammation with hysterectomy	12	62	52	40	90
Salpingo-oöphorectomy for extra-uterine pregnancy	24	30	20	20	55
Hysterectomy for fibroids	33	40	30	30	55
„ with salpingo-oöphorectomy	71	47	37	30	100
„ for carcinoma of the body of the uterus	17	53	43	30	75
Hysterectomy for carcinoma of the cervix (Wertheim)	8	86	76	60	100
Myomectomy	4	36	26	25	50
Hysteropexy	28	20	10	15	25
„ with either ovariotomy or myomectomy	22	29	19	20	65
Hysteropexy with either curetting or perineorrhaphy	14	35	25	25	70
Hysteropexy with anterior colporrhaphy and perineorrhaphy	48	46	36	30	70
Hysteropexy with trachelorrhaphy, colporrhaphy, and perineorrhaphy	13	51	41	35	75
Hysteropexy with ovariotomy or myomectomy, colporrhaphy and perineorrhaphy	4	57	47	55	60
Radical cure of scar hernia	17	33	23	20	50
Exploratory cœliotomy for malignant disease or tuberculous peritonitis	12	25	15	15	30
Abdominal operations in general	427	40	30	15	100

Duration of Operations.

The duration of operations is a matter of some interest. Dr. C. F. Hadfield, who has given anæsthetics on my operation days since Nov. 26th, 1908, has kept a record, for his own use, of the time that patients have been under anæsthetic; and he has kindly allowed me to make an analysis of his notes. The figures are of special value because they represent the results, not of operating against the clock in particular cases, but of ordinary operative work. Dr. Hadfield tells me that the time from the commencement of anæsthesia to the time of the first incision averages about ten minutes; this includes placing the patient in the Trendelenburg position, painting with iodine, and arranging mackintoshes and towels. From Dr. Hadfield's data I have drawn up Table III.

This table can be represented graphically in the form of an "operative clock," which shows at a glance the average time occupied by the various operations. (Chart III.) Wertheim's operation stands out conspicuously as taking, on the average, about 25 minutes longer than any other operation; the next longest operations are total extirpation for inflammatory disease, with an average of 52 minutes, and total extirpation for ovarian tumours, with an average of 49 minutes. Compound operations such as hysteropexy, with ovariotomy or myomectomy, trachelorrhaphy, colporrhaphy, and perineorrhaphy, average from 41 to 47 minutes. Total extirpation for carcinoma of the body of the uterus averages 43 minutes. Hysterectomy for fibroids, with appendage disease, takes 37 minutes, and the ordinary "round trip" of anterior colporrhaphy, perineorrhaphy, and hysteropexy for procidentia takes 36 minutes. All the other operations range from a quarter to half an hour.

To conclude this part of the subject I give the figures for what I regard as the quickest afternoon's work that we have done at Tottenham; I need hardly say that it could not have been done without excellent system and organisation on the part of the nursing staff and highly skilled administration of anæsthetics by Dr. Hadfield. The figures are taken from his notes. April 4th, 1912: 1. Ovariotomy complicating pregnancy; total anæsthesia, 20 minutes. 2. Hysterectomy and double ovariotomy, for fibroid, left ovarian dermoid and right ovarian cyst, 30 minutes. 3. Hysterectomy and double ovariotomy, for cervix fibroid and double hydrosalpinx, 37 minutes. 4. Hysterectomy for fibroid, 30 minutes. 5. Appendicectomy; resection of cyst in ovary, 23 minutes. 6. Hysteropexy, 20 minutes. 7. For extra-uterine pregnancy, 20 minutes. Total of time occupied, 180 minutes. If we take Dr. Hadfield's estimate of an average of 10 minutes for induction of anæsthesia and preparation in each case, it leaves under two hours actual operating for seven abdominal operations.

Drainage in Abdominal Operations.

"To drain or not to drain," that is the question that often exercises the mind. My meditations on this subject, based on the experience which these cases have taught me, may be expressed as follows. It is certain that there are drawbacks in drainage: the patient has the disturbing factor of painful

dressings in the early days; convalescence is often delayed by one or more weeks; when the drainage is prolonged there is a marked tendency to the development of scar hernia; last, and in this case least, from the hospital point of view, drainage means a materially increased expenditure on dressings. But there are also drawbacks in not draining in certain cases; thus, in a case with a tendency to oozing or hæmorrhage from adhesion sites there may be a considerable effusion into the peritoneal cavity which may suppurate later; or the effusion may be so great as to cause alarming signs of internal hæmorrhage; in cases of damage to bowel or bladder where there is a possibility of leakage with consequent infection, and in cases already infected at the time of operation, alarming and even rapidly fatal septic poisoning may supervene. Undoubtedly the risks entailed by not draining, when drainage is indicated, are much greater than those incurred by draining when it is not really necessary. Therefore, I would say generally of drainage that it should always be avoided if possible, but in certain cases it is essential, and because the danger in this respect of leaving undone the things that ought to be done is greater than that of doing the things that ought not to be done I would say, "When in doubt, drain." The cases in which I drain are those with a considerable tendency to oozing from adhesion sites; cases in which the peritoneal cavity has been soiled with pus from the rupture of pus-tubes or the presence of an appendix or other abscess in the peritoneal cavity; cases of peritonitis without actual pus formation, when I am doubtful about the degree of virulence of the infection; and cases in which the bowel walls have been much damaged in the process of separating adhesions.

Drainage material.—I feel sure that in some cases a fæcal fistula has resulted from the pressure of a hard drain-tube on damaged bowel; I have therefore quite discarded glass drainage-tubes, and even rubber tubing I use very rarely. I prefer to use gauze; sometimes a narrow wick, when the object is to have a warning of hæmorrhage; sometimes a thicker strip when I want to provide a definite drainage channel. It is true that gauze is not a quite efficient drain; but neither is a tube, which is apt to get blocked up. The important thing, however, is to provide a channel leading to the outside, along which pus would pass as the line of least resistance. To facilitate removal of the gauze I use a piece of split rubber tubing, through which the gauze passes in the abdominal wall. When the drain is used merely as an indicator of oozing, or as a precaution in case of infection, and is not likely to be required longer than a couple of days, I commonly pass a suture which is left long and can be tied if necessary, so as to occlude the drain-track when the gauze is left out.

Improvements in After-treatment.

This is a subject of much practical importance, and I will therefore devote it to my concluding meditations. Formerly patients who had undergone an abdominal operation were not allowed anything to drink for 24 hours; the best they could hope for was the tantalising concession of being allowed to wash out the mouth with a little hot water, some of which they would gladly have swallowed, but they might not. The practice now is to give them as much water as they want as often as they like. There is no doubt that the restriction was quite uncalled for; and though it was well enough intentioned, in effect it was inhumane, adding a superfluous torture which was often more trying than any other effect of the operation. After all, if a patient is sick, it is generally because there are some irritating contents in the stomach; and a good drink of water, even if returned, washes out such contents. Moreover, it is notoriously more distressing to retch with an empty stomach than to bring up fluid. The second improvement is that which relates to position. Formerly patients were kept flat on the back and immobile for as long as a week; now they are propped up quite early, and allowed to have their position changed with reasonable and even, if necessary, with unreasonable frequency. Which of us even in health could endure lying on the back without moving for several consecutive hours? Clearly, for patients who are weak and feeling miserable and in pain, the ordeal is much more severe; it aggravates their pain, it brings about muscular stiffness and aching, and it increases the difficulty of contending with the tendency to flatulence which is so marked after operations, and is specially incidental to the recumbent position. The improvement in the general well-being of patients who have been raised up into a sitting position and moved gently from time to time is most striking.

"Fowler's position," as it is called, means sitting a patient upright, with a bed-rest and a knee-pillow and an arrangement of straps to prevent slipping. It was introduced primarily for the treatment of peritonitis, when it was combined with drainage of the pelvis and with the more or less continuous administration of saline solution by the rectal method. I feel sure that this improvement in treatment has been the direct means of saving many lives, not only in cases of suppurative pelvic conditions in women, but also in the domain of general surgery. It is a matter of great interest to note that it was the introduction of this position for septic cases that led to its adoption after abdominal operations in general. We said: "If septic cases are so much more comfortable sitting up, why should ordinary cases not feel better also?" Ordinary cases are, of course, allowed to lie down from time to time, especially when they are settled for the night; septic cases can be kept sitting up for days together, and they sleep quite comfortably in that position. In fact, if one had to choose between persistently sitting up and persistently lying down, the sitting up entails the less discomfort.

Early attention to the bowels is another improvement. I do not say that this is a modern innovation, because 15 or even 20 years ago there were enlightened surgeons who recognised that the greatest safeguard against sepsis and obstruction was to secure early action of the bowels. But the general recognition of this truth is of more recent date. In cases of threatened sepsis or ileus, one of the most satisfactory plans is the administration of small repeated doses of calomel. A half-grain dose hourly until six doses have been given is usually sufficient; and years ago the gynæcologists of the Birmingham school used to give even smaller doses, such as 1/6th grain hourly. Few cases are apt to give one so much anxiety after abdominal operation as those of threatened obstruction, especially when it comes to the point that one has to consider seriously the question of re-opening the abdomen. There are, of course, cases of

definite obstruction, where nothing short of operation will avail, and it behoves one to recognise these cases. But there are others, more on the borderland, that can be treated successfully by other means. Some years ago, in the presence of such a case, I was debating operation; my experience of re-opening for obstruction had not been encouraging, and I decided to try the effect of hot fomentations on the abdomen, gentle abdominal massage, and repeated doses of ergotinine hypodermically, the object being to get the paretic bowel to contract. The effect was most satisfactory. Since that time research has given us even more valuable agents than ergot and its derivatives; first we had adrenalin, and more lately the priceless pituitary extract. When the abdomen is blown up and the patient is suffering intense discomfort and pain, when little or no flatus is being passed and we are getting anxious, pituitary extract given hypodermically and repeated if necessary four-hourly, combined with small repeated doses of calomel and a turpentine enema will nearly always relieve both the patient's distress and our anxieties in quite a short time.

At one time no abdominal operation was considered complete unless it was followed by the wearing of a cumbersome and unwieldy surgical belt. Encased in these atrocities patients eked out a prolonged convalescence for a year, and sometimes for years. Their abdominal muscles remained flabby from disuse, and the only persons who derived a solid advantage from these belts were the makers. A parallel may be found in the ancient practice of keeping fractured limbs encased for months in plaster-of-Paris. Now we recognise that in both cases the essential thing is to get the muscles restored to their proper tone by early use and if necessary by massage. For abdominal cases, especially when the three-layer method is used for sewing up, no kind of belt is really required, particularly since the introduction of the long straight-fronted corset, which gives all the protection that is necessary; but many patients derive comfort from a woven binder, of the type of the so-called "cholera belt," which can be worn for a few months. The final improvement is in encouraging patients to a quick convalescence, instead of keeping them invalids, as can be done only too easily by an injudicious form of suggestion. I recognise, of course, the variability of the personal factor; some patients receive a much more profound mental and physical shock from even a slight abdominal operation than others do after a severe operation; but very much can be done by encouragement and by gentle stimulus along the path of convalescence.

I feel that I shall only be rendering a just tribute if, in concluding this summary of my work at the hospital, I acknowledge with sincere gratitude my indebtedness to my fellow workers who have contributed in so important a degree to such success as has attended that work. The governors of the hospital have always given the most sympathetic help to me and to my colleagues in readily granting our requests for whatever tended to facility in our work and the benefit of our patients. I am indebted to a succession of excellent resident medical officers for help in my operations and for zealous care of the patients afterwards. Several anæsthetists have collaborated with me, and I must express my special thanks to Dr. Hadfield for his most valuable help during the last five and a half years. To Miss Fox and the nurses whom she has trained much more than a formal acknowledgment is due, for I cannot but appreciate the all-important part that good nursing has had in obtaining satisfactory results. To the two sisters who have had charge of my ward since November, 1907, I offer, in all gratitude, this simple statistical tribute: From 1900 to October, 1907, 347 cases, 22 deaths; mortality, 6·3 per cent. November, 1907, to May, 1911, under Miss Ada Simmonds, 387 cases, 14 deaths; mortality, 3·6 per cent. June, 1911, to February, 1914, under Miss Bessie Allen, 314 cases, 9 deaths; mortality, 2·8 per cent.

Upper Wimpole-street, W.

DISEASES OF THE PITUITARY GLAND AND THEIR EFFECT ON THE SHAPE OF THE SELLA TURCICA.[1]

BY E. G. FEARNSIDES, M.A., M.D., B.C. CANTAB., B.SC. LOND., M.R.C.P. LOND.,

MEDICAL REGISTRAR, LONDON HOSPITAL; ASSISTANT PHYSICIAN TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE, W.

ANATOMICALLY the pituitary body or hypophysis cerebri consists of two great portions, a glandular anterior lobe and a nervous posterior lobe. Embryologically these two lobes have different origins, the anterior being derived from the epiblast of Rathke's pouch and the posterior from a downgrowth of neuroblast from the region of the third ventricle. Physiologically the anterior and posterior lobes appear to serve different functions, the anterior being related to the general growth of the body and especially of the skeleton, whilst the posterior lobe and its glandular envelope, the pars intermedia, seem to promote the contractility and increase the tone of the plain muscle generally, as well as of the heart, and to excite the activity of certain glands—viz., the kidney and mammary gland (Schäfer). Extracts obtained from the posterior lobe when injected into animals produce changes in the blood pressure, changes in the secretion of the urine and of the mammary gland, and cause contractions of all involuntary muscle, whilst extracts made from the anterior lobe are relatively inactive. By the methods of extirpation of portions of the gland in animals it has been shown that removal of the anterior lobe produces adiposity, accompanied by secondary hypoplasia of the organs of generation in the adult, or by a persistence of sexual infantilism in case the primary hypophyseal deficiency antedates adolescence, and occasionally by polyuria, alterations in the skin and its appendages (such as œdemas and hypotrichosis), and by a tendency to the development of a subnormal temperature and psychic disturbances (Crowe, Cushing, and Homans); whilst the posterior lobe plays a significant rôle in the metabolism of carbohydrates.

The pituitary body lies in the most protected portion of the skull, encased in the bony sella turcica, and in the anterior angle of the optic chiasma. It is separated from the general cranial cavity by a firm fibrous connective-tissue layer, the diaphragma sellæ, a part of the dura mater, which is perforated in its middle to allow of the passage of the infundibular stalk. The most common and most important disorders of the pituitary body are caused by tumour growths arising either in the gland itself or from one of the neighbouring "rests" of the cranio-pharyngeal duct which

[1] A paper read before the Electrotherapeutical Section of the Royal Society of Medicine.

frequently persists into adult life as an evidence of the double nature of the body itself.

Clinically the disorders which arise in consequence of changes in the pituitary body are extremely complex. For disease processes may originate in either lobe without the involvement of the other, or one lobe may be the seat of an adenomatous change and physiologically overactive, and by pressure upon the other lobe may impair its function and cause an underactivity of this part, or the body may be involved secondarily owing to changes elsewhere inside the cranial cavity, or in some one or other of the interrelated organs of internal secretion—e.g., the thyroid or the ovaries.

In practice patients showing features similar to those obtained experimentally in animals are not uncommon. In the course of the last seven months at the London Hospital I have seen some dozen examples of such cases. In these examples the clinical features appear to have been an expression *either* of a deficiency *or* an excess, *or* an alteration in the activities of one or other or both lobes of the body.

Comparing the disorders due to the pituitary body with those met with in the case of the thyroid gland the custom has grown up to speak of *hyper (super) pituitarism* when the clinical features are believed to be an expression of excessive activity on the part of the gland, of *hypo (sub) pituitarism* when they are assumed to be due to a deficient secretion of the gland, and of *dyspituitarism* when due to more or less complex alterations affecting the secretion of the two lobes together. Acromegaly is believed to be the clinical expression of hyperpituitarism. Dystrophia adiposo-genitalis (Fröhlich syndrome) and some forms of infantilism and of glycosuria are supposed on good grounds to be expressions of hypopituitarism.

In the majority of patients showing hyperthyroidism the thyroid gland shows considerable enlargement. The pituitary body, as we have already seen, lies encased in the bony sella turcica. If an enlargement of the gland takes place either the diaphragma sellæ must be freed from its attachments to the clinoid processes or the bony walls of the fossa must be eroded. In either case the outline of the base of the sella turcica will be altered by disease of the contained pituitary body, and a skiagram will give us definite evidence of these changes.

In acromegaly, in my experience, there is always some definite evidence of an increase in size of the pituitary fossa. In hypo(sub)thyroidism (myxœdema), on the other hand, a small thyroid is the rule; by analogy, therefore, we should expect that in hypo(sub)pituitarism little or no change in the configuration of the pituitary fossa would appear in skiagrams of this region, and this I believe to be a common finding. Like certain cases of Graves's disease, which later take on features of myxœdema, certain cases of acromegaly later take on features similar to those found in hypo(sub)pituitarism; in radiograms of the skull of these patients we should expect to find changes in the sella turcica, and Cushing has shown that this does actually happen.

Cushing has divided the enlargements of the sella turcica occurring with primary growths arising from the pituitary body itself into three types: (1) those associated with thickening of the clinoid processes and dorsum sellæ; (2) those showing thinning from pressure absorption of these parts; and (3) those showing more or less destruction of all the outlines of this region; and he states that tumours arising from the pituitary stalk in the interpeduncular region and situated above the sella—the so-called superimposed tumours—give rise to changes in the sella turcica only after they have reached a considerable size (Goetsch). In the skeleton the measurements of the normal pituitary fossa, as given by Keith, average antero-posteriorly (interclinoid distance) 10 to 12 mm., 14 to 15 mm. transversely, and 8 mm. in depth. In profile radiograms measurements exceeding 15 mm. antero-posteriorly and 10 mm. in depth may be looked upon as indicating an enlargement (Cushing). With an undistended sella the floor of the fossa in the skiagram should show a single clear basal outline.

Clinically the 12 cases, which I wish at present to bring under notice (see table) can be divided into—

Examples of	Acromegaly	3
,,	Dystrophia adiposo-genitalis	3
,,	Infantilism and optic atrophy	1
,,	Primary optic atrophy and glycosuria ...	1
,,	Optic atrophy without any signs of disturbance in general metabolism... ...	1
,,	Hydrocephalus, spastic paraplegia, and ataxia of the legs with sub pituitarism	1
,,	The "pudding-face" type of dyspituitarism	2

Clinically the three examples showing acromegaly differed widely. In Case 1, a man aged 46, the condition was completely stationary; the skeletal overgrowth had appeared between the ages of 24 and 30, and for 15 years before the patient came under observation for the radical cure of a large inguinal hernia had been completely stationary. Cases 2 and 3, on the other hand, came under observation complaining of the recent increase in size of the extremities and head. In Case 2, a woman aged 40, the overgrowth commenced when the patient was 37 years of age, whilst in Case 3, a man aged 46, changes in the size of the bones began to appear at the age of 44.

FIG. 1

CASE 1.—Acromegaly (stationary). The clinoid processes are displaced upwards. The interclinoid distance measures 15 mm. The floor of the pituitary fossa shows an anterior and a posterior bulge.

The radiological findings in Cases 1 and 2 (see Fig. 1) are similar: in each the clinoid processes are displaced upwards and the floor of the fossa is depressed with the formation of anterior and posterior bulges and the interclinoid distance in each measures 15 mm. In Case 3, on the other hand, the floor of the fossa in the skiagram appears natural, but there is some displacement upwards of the clinoid processes without much alteration in the interclinoid distance, which measures 10 mm.

TABLE GIVING PARTICULARS OF 12 CASES

Onset of condition and history.	Sex and age.	Sella turcica.	Visual disturbances.	Skeletal signs.	Cutaneous and subcutaneous.	Sexual glands.	Tolerance of carbohydrates.	Thyroid.	Voice.	
CASE 1. *Acromegaly, stationary.* Onset of condition between ages 24 and 30. Eight healthy children ranging from 22 to 8 years of age. Stationary for many years.	M., 45	The clinoid processes are displaced upwards. The interclinoid distance measures 15 mm. The floor of the pituitary fossa shows an anterior and a posterior bulge. (Fig. 1.)	Discs and fundi healthy. Visual fields normal.	Classical signs of acromegaly with enormous hands and feet and great overgrowth of inferior maxillæ. Punchinello chest.	Distribution of fat normal. Cyanosis of hands and feet.	Normal.	200 grammes of glucose given by mouth were not followed by the excretion of sugar in the urine.	Of average size.	Natural.	1
CASE 2. *Acromegaly, progressive.* Married. Onset of condition at age of 37. Right breast removed for chronic mastitis at age of 33.	F., 40	The clinoid processes are displaced upwards. The interclinoid distance measures 15 mm. The floor of the pituitary fossa shows an anterior and a posterior bulge.	Discs and fundi healthy. Visual fields show some contraction down and out on each side. Central vision form and colour good.	Classical signs of acromegaly; large hands and feet; great overgrowth of lower jaw. No kyphoscoliosis.	Dry skin and harsh hair suggesting myxœdema.	Catamenia regular.	(Not tested.)	Small, not palpable.	,,	2
CASE 3. *Acromegaly, progressive.* Onset of condition at age of 44.	M., 46	The clinoid processes are slightly displaced upwards. The floor of the pituitary fossa appears natural. The interclinoid distance measures 10 mm.	Old iridectomy R. (at age of 44). Fundi and discs healthy. Left visual field small, right extremely small. Central vision good.	Classical signs of acromegaly; feet and hands large; large lower jaw; head enlarging (larger hat), circumference 22½ inches.	Distribution of fat normal. Skin dry and harsh.	Normal.	300 grammes of glucose administered by mouth were not followed by the excretion of sugar in the urine.	Of average size.	Natural. Speaks English badly.	3
CASE 4. *Dystrophia adiposo-genitalis.* History of cranial injury at 10 years of age. Onset of symptoms at age of 17.	M., 20	Shape of sella turcica normal. The interclinoid distance measures 10 mm. and the depth is 10 mm.	Discs and fundi healthy. ? Some limitation of visual fields (not very definite.)	Epiphyses of fingers and toes not joined. Swelling of left fourth toe. Swelling, chiefly periarticular, of left second and third fingers and of right third and fourth fingers.	Skin soft and feminine. General excess of fat of typus femininus. No excess of pigmentation. No pubic or axillary hair.	Testes and external genitalia small and infantile.	No sugar detected in the urine after the ingestion of 200 grammes of glucose.	Small.	Treble and infantile.	4
CASE 5. *Dystrophia adiposo-genitalis.* Onset of symptoms at age of 12½.	M., 15	Enlargement of sella turcica chiefly downwards, but there are no bulges on the lower outline. The posterior clinoid processes appear abortened and displaced upwards. The interclinoid distance measures 15 mm.	Discs pale with softening of the edges, no lamina cribrosa seen. Much limitation of upper and lower visual fields.	Delayed union of all epiphyses.	Skin soft and feminine. General excess of fat of typus femininus. No excess of pigmentation. No pubic or axillary hair.	Testes and external genitalia small and infantile.	No sugar detected in the urine after 200 grammes glucose had been taken by mouth.	,,	,,	5
CASE 6. *Dystrophia adiposo-genitalis.* Onset of symptoms at age of 10½ years.	F., 11	Sella turcica shallow and ill-defined. The interclinoid distance measures 5 mm. (at age of 11) and the depth of the fossa is 4 mm.	August, 1913: No changes in discs. January, 1914: Optic discs pale and atrophic. edges softened, lamina cribrosa present.	Nil.	Some excess of fat. Skin extremely soft and downy. No growth of axillary or pubic hair.	—	No sugar detected in urine after the administration of 200 grammes of glucose.	,,	Squeaky.	6
CASE 7. *Lorain type with optic atrophy.*	M., 19	Extensive, irregular enlargement of the sella turcica. The enlargement has taken place chiefly in a forward direction. There is a very definite shadow of a long posterior clinoid process. The interclinoid distance measures 32 mm.	Bilateral primary optic atrophy; onset with left temporal hemianopsia followed by right temporal hemianopsia; then progressive loss of nasal vision to complete blindness 2½ years after onset of symptoms.	Delayed union of epiphyses.	Sparsely covered boy. No growth of pubic or axillary hair.	Testes and external genitalia infantile.	No sugar appeared in the urine after 300 grammes of glucose had been taken by mouth.	Of average size.	Treble and infantile.	7

OF DISEASES OF THE PITUITARY GLAND.

	Blood pressure.	Torpidity and drowsiness.	Psychic disturbances.	Oculomotor nerves.	Other cranial nerves.	Reflexes, &c.	Sphincters.	Urine.	Wassermann reaction.	Weight.	Temperature.	Pulse.
1	—	Nil.	Nil.	Unaffected.	Unaffected.	Reflexes, motion, and sensation unaffected.	Controlled.	Natural.*	Negative.	—	Normal.	60–70
2	125 mm.	Drowsy.	Slow in speech and in movement.	,,	,,	,,	,,	Natural.	,,	—	,,	72
3	—	Attacks of giddiness followed by somnolence and accompanied by intense general headaches and at times by vomiting.	,,	,,	,,	,,	,,	,,	,,	—	,,	70–
4	60 mm., rising to 120 mm. on treatment with posterior lobe pituitary extract.	Somnolence noteworthy.	Unconscious of changes in himself; dull, intelligent, good tempered; no initiative.	Occasional diplopia. Pupils reacted normally.	Smell unaffected. Weakness of right sixth. Permanent squint. Right nerve deafness.	Knee-jerks exaggerated. No ankle clonus. Bilateral extensor plantar responses.	Attacks of incontinence of urine and fæces usually by night.	,,	,,	7 st. 10 lb.	Subnormal (96–97° F. morning, 98° evening).	100
5	—	Extremely drowsy.	Dull, good tempered; simple, intelligent; no initiative.	Ptosis, left. No diplopia. Pupils irregular, reacted sluggishly to light.	Smell unaffected. Facial movements irregular. No facial palsy. No deafness.	Spastic gait; adductor spasm; knee-jerks exaggerated; bilateral ankle clonus; bilateral extensor plantar responses.	Controlled.	,,	,,	7 st. 12 lb.	Subnormal.	90
6	88 mm.	Not noteworthy.	Dull, stupid, slow at learning; intelligent.	Pupils normal; slight ptosis, left; no diplopia.	Smell unaffected, sixth, seventh, and eighth nerves unaffected.	Spastic gait and adductor spasm developed between August, 1913, and January, 1914. Knee-jerks exaggerated, left more than right. Ankle clonus, left. Extensor plantar responses, right and left.	,,	,,	,,	6 st. 4 lb.	,,	80
7	100 mm.	Very noticeable; some general headache.	Mental changes developed two years after onset of left temporal hemianopsia.	Some exophthalmos, right and left. Slight ptosis, left. External squint, left. Pupils, no reaction to light (blind).	Weakness upper and lower right half of face. Paresis of right halves of palate and tongue.	Right hemiplegic weakness. Knee-jerks exaggerated. No ankle clonus. Right plantar response extensor.	,,	,,	,,	—	,,	80

TABLE GIVING PARTICULARS OF 12 CASES

Onset of condition and history.	Sex and age.	Sella turcica.	Visual disturbances.	Skeletal signs.	Cutaneous and subcutaneous.	Sexual glands.	Tolerance of carbohydrates.	Thyroid.	Voice.	
CASE 8. *Pituitary cyst; primary optic atrophy; glycosuria, with cholelithiasis.* Married; six living children. Menopause at 48 years. Onset of blindness at age of 46.	F., 54	There is much general disturbance of the outlines of the pituitary fossa. No shadow of the clinoid processes can be distinguished; an estimate of interclinoid distance cannot be made. Above the sellar region is a less dense shadow, evidently due to a pituitary cyst. (Fig. 2.)	Complete bilateral primary optic atrophy, with total inability to appreciate light and darkness.	Nil.	Well covered; the fat has a normal distribution.	Menopause at age of 46.	3 per cent. glucose with no acetoacetic acid in urine. The sugar disappeared from the urine on dieting. After operation no change in sugar tolerance.	Of average size.	Natural.	8
CASE 9. *Optic atrophy; bitemporal hemianopsia: sellar changes.* Onset of hemianopsia, October, 1910. Under observation March, 1912.	F., 32	There is a slight uniform enlargement of the sella turcica, with commencing increase in the distance between the clinoid processes (15 mm.).	Bitemporal hemianopsia. Primary optic atrophy, right and left.	"	No gross abnormalities in fat discovered. At onset of visual changes got "fatter"; now normal again. Hair falling out, skin dry.	Catamenia regular.	Not tested.	Not palpable.	"	9
CASE 10. *Hydrocephalus; spasticity and ataxia of legs; dyspituitarism.*	M., 5.	The pituitary fossa is shallow. The interclinoid distance measures 10 mm., the depth is 7 mm.	Discs pale, fundus generally pigmented. Vision good.	"	Fat boy with olive complexion. Large head with frontal bossing.	Genital organs very undeveloped.	"	"	—	10
CASE 11. *Subpituitarism, pudding face type.* Onset of symptoms at age of 18½ years.	F., 21.	Sella turcica well defined. The interclinoid distance measures 10 mm., the depth is 12 mm. (Fig. 3.)	Discs and fundi healthy. Slight general limitation of the fields of vision in all directions.		Well covered; shoulder contours rounded. Fat, red, outstanding cheeks. Hair of scalp dry and curly, of pubes and axillæ harsh and scanty. Staphylococcal abscesses leading to ulcers on shoulders, abdomen, and back.	Amenorrhœa since age of 18½. Rectal examination negative. Mammæ small; nipples pigmented.	No sugar detected in urine after the administration of 180 grammes of sugar by mouth.	"	Harsh, squeaky. "Can no longer sing."	11
CASE 12. *Subpituitarism, pudding face type; ophthalmoplegia.* Normal till age of 7. At 8 eye movements were lost. Since then no change in vision or in eye movements. One brother, aged 17, and a sister, aged 8. (? congenital abnormality.	F., 15.	Pituitary fossa small and shallow. The interclinoid distance measures 5 mm., and the depth of the sella is 5 mm.	Discs and fundi healthy, no œdema and no atrophy. Visual fields natural.	"	Subcutaneous fat in excess. Fat, rounded, red cheeks. Skin coarse and dry.	Has never menstruated.	Not tested.	Definite goitrous enlargement of thyroid.	Speaks slowly; voice squeaky and childish.	12

* Admitted to hospital for radical cure of a large right inguinal hernia. † Admitted to hospital with hepatic colic

In Case 1 no changes in the fundus oculi or in the visual fields were present, and there were no signs of local nervous derangements. In Case 2, on the other hand, although the fundus oculi appeared natural, the visual fields showed some contraction downwards and outwards, and in Case 3 there was much contraction of both visual fields, the left being small and the right extremely small. In Case 2 no signs of local nervous involvement were present, but in Case 3 the patient complained of attacks of giddiness and of headache, although no evidence of gross nervous derangements was obtained.

The three examples of dystrophia adiposo-genitalis clinically resemble one another more closely. In Case 4, a boy aged 20, symptoms appeared at the age of 17. In this case there is a history of a fall followed by a period of shock

OF DISEASES OF THE PITUITARY GLAND—*(Continued)*.

	Blood pressure.	Torpidity and drowsiness.	Psychic disturbances.	Oculomotor nerves.	Other cranial nerves.	Reflexes, &c.	Sphincters.	Urine.	Wassermann reaction.	Weight.	Temperature	Pulse.
8	—	Nil.	Nil.	Pupils do not react to light (blind).	Unaffected.	Reflexes, motion, and sensation unaffected.	Controlled.	No albumin. 3 per cent. glucose. Bacillus coli in cultures.†	Negative in serum and in cerebro-spinal fluid, and 1 cell per c.mm. in cerebro-spinal fluid.	11 st. 9 lb.	Normal.	60-70
9	—	Intense headaches at the onset with somnolence; these had passed away before the patient came under observation.	—	Light shone into right eye yields no contraction of pupils; into left eye causes both pupils to contract.	,,	,,	,,	Natural.	Negative.	9 st. 6 lb.	,,	80-90
10	—	—	—	Unaffected.	,,	Spastic and ataxic legs (? cerebellar ? posterior column ataxia). Knee-jerks exaggerated. Bilateral ankle clonus. Plantar responses extensor right and left. Sensation apparently unaffected.	Dribbling; incontinence of urine.	,,	Negative in serum and in cerebro-spinal fluid. Pleocytosis in cerebro-spinal fluid.	—	,,	80-90
11	180 mm. falling to 120 mm. on administration of thyroid extract.	Not noteworthy.	No gross psychic disturbances; had become introspective because her face attracted attention.	,,	,,	Reflexes, &c., natural.	Unaffected.	,,	Negative.	8 st. 4 lb. (5 ft. 3 in.)	Subnormal.	70-80
12	—	Not noticeable.	Standard VII. at age of 14. Inattentive until objects are seen, then attention is good.	Grave, but not total ophthalmoplegia externa, right and left. No power of convergence, but no diplopia. In good light pupils at times unequal, but both reacted well to light. Considerable ptosis, right and left.	Smell unaffected. No deafness. Facial movements natural.	Knee-jerks natural. Plantars flexor.	,,	,,	,,	5 st. 2 lb.	,,	96-100

due to a gall-stone. Operation. Recovery. After removal of stone from cystic duct no alteration in sugar tolerance occurred.

with loss of consciousness lasting some 24 hours, and the development of right-sided internal ear (nerve) deafness at the age of 10. Three years after the onset of symptoms this patient in addition to dystrophia adiposo-genitalis suffered from occasional attacks of diplopia, a permanent squint due to a paresis of the right external rectus, and right internal ear deafness; the visual fields were slightly contracted, but no changes in the fundus oculi were present; the knee-jerks on each side were exaggerated and both plantar responses were of the extensor type. The skiagram of the sellar region, however, showed no definable abnormalities.

In Case 5, a boy aged 15, symptoms appeared at the age of 12½. Two and a half years later he showed softening of the edges of the optic discs and much limitation of the upper and lower visual fields; on

the left side ptosis was present; the pupils contracted sluggishly to light, but diplopia had never occurred. He was typically spastic with scissoring of the gait due to a severe degree of adductor spasm. The knee-jerks were exaggerated, ankle clonus could be obtained on each side, and the plantar responses were definitely extensor. The skiagram shows a general downward enlargement of the floor of the pituitary fossa and an apparent shortening of the posterior clinoid processes.

Case 6, a girl aged 11, came under observation in August, 1913. At that time she was fat and her mental condition closely resembled that observed in Cases 4 and 5; her visual fields were normal and the fundus oculi on each side appeared healthy. Under observation she has developed bilateral pyramidal interference with ankle clonus on the left side and both plantar responses are now extensor; the left leg has become extremely spastic and at the same time the optic discs have become pale and atrophic and their edges softened. In the skiagrams of this patient taken in August, 1913, and in January, 1914, the sella turcica appeared ill-defined and shallow.

Case 7 is an example of the Lorain type of dystrophy associated with disease of the pituitary body. At the age of 16 this patient developed a left-sided temporal hemianopsia, followed a few months later by a right-sided temporal hemianopsia and within the space of two and a half years he became totally blind. Shortly after this he developed slight exophthalmos on each side, left-sided ptosis, strabismus, and signs of pressure upon the left crus cerebri. The skiagram of this patient shows an extensive, irregular enlargement of the pituitary fossa; the enlargement has taken place chiefly in a forward direction and there is a shadow of a long posterior clinoid process.

FIG. 2.

CASE 8.—Pituitary cyst, primary optic atrophy, glycosuria. There is much general disturbance in the outlines of the pituitary fossa. No shadow of the clinoid processes can be distinguished and an estimate of the interclinoid distance cannot be made. Above the sellar region is a less dense shadow, evidently due to a pituitary cyst.

In Case 8, a married woman aged 54, primary optic atrophy developed at the age of 46. In 1908 this patient was under observation in hospital; the only sign of derangement discovered at this time was bilateral white optic atrophy and the urine contained no sugar. In 1913, when she was readmitted complaining of attacks of colic, glucose was found to be present in the urine. As an in-patient she suffered from typical attacks of hepatic colic and a diagnosis of gall-stones was made. This diagnosis explained the attacks of colic and suggested a cause for the glycosuria but not for the blindness. A radiogram of the skull was taken (Fig. 2); this showed a general disturbance in all the outlines of the pituitary fossa, no clinoid processes, but a less dense shadow, evidently due to a pituitary cyst, above the region of the sella turcica. At the operation a single gall-stone was found blocking the cystic duct; the pancreas appeared normal. The suggestion is that a cystic pituitary tumour encroached on the optic chiasma causing blindness, and on the posterior lobe of the pituitary gland giving rise to glycosuria. On the other hand, the glycosuria might be due to pancreatic disease.

In Case 9 the diagnosis of pituitary disease depends solely upon the X ray findings. In October, 1910, this patient developed bitemporal hemianopsia, and in March, 1912, this hemianopsia was the only discoverable manifestation of disease, but the skiagram shows a slight general enlargement with some increase of the antero-posterior diameter of the pituitary fossa.

FIG. 3.

CASE 11.—Subpituitarism ("pudding-face" type). Sella turcica well defined. The interclinoid distance measures 10 mm., the depth is 12 mm.

Cushing has shown that many patients with cerebral tumours, although they vomit freely, do not waste, and that at necropsies on cases which in life have shown signs of increased intracranial pressure the pituitary body often shows signs of compression. From these observations he was led to collect evidence on the frequency of the appearance of manifestations of subpituitarism in clinical examples of increased intracranial pressure, and he states that this is not infrequent. Case 10 is an example of such an occurrence. The patient, a boy aged 5, has a large head and other manifestations of hydrocephalus; in addition he shows spasticity and ataxia of the legs; the knee-jerks are exaggerated, ankle clonus is readily elicited on each side, both plantar responses are of the extensor type, and he suffers from incontinence of urine. The radiogram of the skull of this patient shows an extremely shallow, small pituitary fossa.

Cases 11 and 12 are examples of another variety of dyspituitarism—the so-called "pudding-face" type. Case 11, a young woman aged 21, was perfectly normal until the age of 18½; then amenorrhœa set in, her hair fell out, and her voice changed; shortly after this her face grew fat and "pudding-like" and her hair grew thick and curly. Since this time she has not menstruated and no

further changes in her appearance have occurred. The blood pressure in May, 1913, was 180 mm., but under the administration of thyroid extract it fell to 120 mm. No abnormal nervous signs have ever been discovered. The skiagram of the skull (Fig. 3) shows a rather deep sella turcica (12 mm.) with well-defined lower margins and no change in the antero-posterior diameter. In many ways this case resembles a case of myxœdema, but treatment with thyroid extract has not removed any of the disabilities. Case 12, a girl aged 15, is said to have been normal until the age of 7; then in the course of a few months an almost complete external ophthalmoplegia associated with bilateral ptosis developed. At the age of 15 she has never menstruated, and is an undeveloped girl showing no secondary sexual characters, a large "pudding-face," and extremely defective external eye movements, but no other nervous signs. Her thyroid shows considerable enlargement with the development of a goitre. The radiogram of the skull shows an extremely small and very shallow sella turcica, measuring antero-posteriorly 5 mm. and 5 mm. in depth. The suggested explanation of the clinical findings is that some change has occurred in the activities of the pituitary gland; the development of an enlargement of the thyroid gland is in accordance with this hypothesis.

In addition to the changes in general metabolism disease processes arising in the pituitary body owing to the anatomical relations of the gland to the optic tracts, to the third cranial nerves, and to the crura cerebri, early give rise to localising nervous signs. The appearance of these together with the changes known to occur when the activities of the pituitary body are deranged, or with radiographic changes in the conformation of the sella turcica, renders diagnosis of pituitary disorder more certain than in other intracranial conditions. In doubtful cases a change in the size or shape of the sella turcica as seen in the X ray plate is at present the most certain evidence of pituitary disorder.

My best thanks are due to Mr. F. S. Kidd, Dr. H. Head, Dr. R. Hutchison, Dr. R. C. B. Wall, Dr. Lewis A. Smith, and to Mr. A. B. Roxburgh for permission to publish the cases which have been under their care, and to Dr. Gilbert Scott who took the skiagrams.

Queen Anne-street, W.

A CASE OF TRIPLETS SUCCESSFULLY BREAST-FED.

BY JAMES MORRISON, M.D. LOND.

ON Nov. 3rd, 1913, I was called to see a woman, aged 37, who had been confined of triplets—two girls and a boy. The mother had previously had seven children. The babies were small and immature, though born at full time. They had been fed at the breast throughout, but were not thriving; there was marked absence of subcutaneous fat, and the skin was wrinkled and red. The respective weights at birth were: James, 5 lb.; Violet, 4¾ lb.; and Rose, 4¼ lb. On Nov. 3rd, when four weeks old, their weights were: James, 4 lb.; Violet, 3¾ lb.; and Rose, 4 lb. On Oct. 29th a sample of mother's milk was drawn off and reported upon as follows: Specific gravity, 1035; fat, 1·06 per cent.; carbohydrates, 7·91 per cent.; proteids, 0·63 per cent.; salts, 0·26 per cent.; and water, 90·11 per cent. The children were quite healthy, but weakly, crying, and fretful, and evidently not getting enough nourishment. The mother was given lactagol in order to improve the quantity and quality of the milk, which was very deficient in fat and proteid; she took on an average two teaspoonfuls three times a day.

On Nov. 10th, a week later, the boy was distinctly weaker and had got a bad cold. I therefore instructed the mother always to give him first feed, and for a time to draw off the milk and feed him with a spoon to be quite sure he got food. In a few days' time he picked up. On the 17th the mother had a bad influenza cold with herpes on the cheek and pains between the shoulders; she was feeling the wear of feeding the three children. The cold was treated with salicylate of soda, and later quassia and iron mixture; a small follicular abscess had to be opened on the left breast. She was now able to draw off from four to five teaspoonfuls of milk at a time with a breast pump to feed the boy. On the 18th another sample of milk was taken, the report being as follows: Specific gravity, 1035; fat, 1·65 per cent.; carbohydrates, 6·61 per cent.; proteids, 1·81 per cent.; salts, 0·274 per cent.; and water, 86·69 per cent. This showed a distinct improvement in the percentage of both fat and proteids.

On Nov. 28th the three children were all distinctly thriving and filling out; the mother's breasts were fuller and the children cried less. The mother had lost her aches and pains and was feeling well. From this date onwards the children made distinct improvement, the mother's milk being good in colour and consistency, the children sleeping better and crying less. The mother got a little distaste for the lactagol about this time, so the quantity given was lessened for a period, but eventually we were able to give increased amounts without any complaint.

On Dec. 19th a third report of the milk was obtained as follows: Specific gravity, 1035; fat, 1·90 per cent.; carbohydrates, 6·58 per cent.; proteids, 1·442 per cent.; salts, 0·270 per cent.; and water, 89·72 per cent. This report showed a further increase in the percentage of fat.

On Jan. 10th, 1914, the child Rose was found to have a slight left inguinal hernia and protrusion of the navel, but all three babies were gaining steadily in weight. On Feb. 9th the milk was again examined and the report was as follows: Specific gravity, 1036; fat, 1·3 per cent.; carbohydrates, 6·57 per cent.; proteids, 1·78 per cent.; salts, 0·195 per cent.; and water, 90·11 per cent. This showed a slightly lower percentage in fat and a distinct increase in the percentage of proteid. The mother could now easily feed the three children without feeling run down, and the latter have steadily been gaining weight up to the present time.

Weymouth-street, W.

NATIONAL ASSOCIATION FOR THE PREVENTION OF INFANT MORTALITY AND FOR THE WELFARE OF INFANCY.—A deputation from this association interviewed Mr. Masterman at the offices of the National Insurance Commission on June 25th to urge that the administration of the maternity benefit and also any future extension of the care of maternity should be in the hands of the public health authorities. The deputation consisted of Mr. Benjamin Broadbent and Dr. S. G. Moore (Huddersfield), Dr. John Robertson (Birmingham), and Dr. Eric Pritchard and Dr. Amand Routh (London).

A PATHOLOGICAL INVESTIGATION OF FOUR CASES OF PITUITARY TUMOUR.

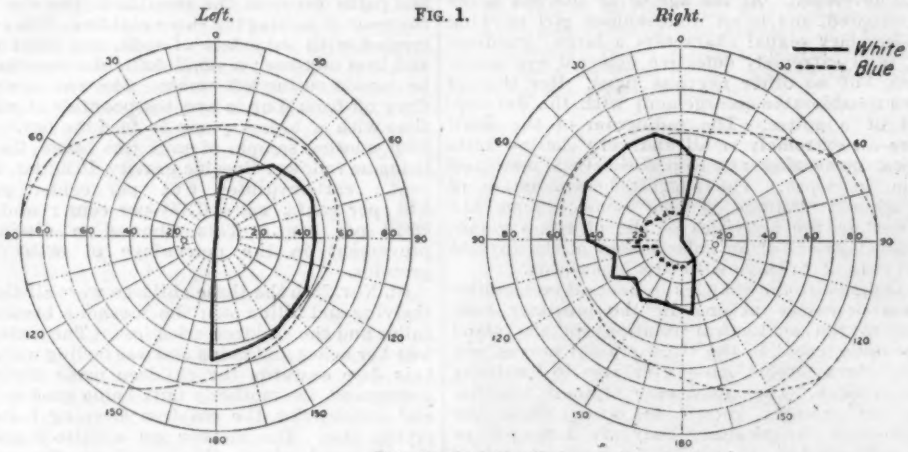
BY W. JOHNSON, M.D. LOND., M.R.C.P. LOND.,
GUIL STUDENT, GUY'S HOSPITAL.
(*From the Pathological Department, Guy's Hospital.*)

IN view of the comparative rarity of tumours of the pituitary body and of the interest recently aroused in them, the publication of the pathological investigation of four fatal cases from Guy's Hospital may prove of value. The first two descriptions are taken from cases which came to necropsy during the past year. The last two are from specimens in Guy's Hospital Museum which date back to 1883 and 1877 respectively. In the first case advantage has been taken of the fact that a complete examination of the eyes had been made by Mr. H. L. Eason to undertake an inquiry into the extent of the degenerative changes resulting in the visual system of nerve fibres and cells. In the second case, also, degeneration has been demonstrated in the optic tracts, but unfortunately in this instance it cannot be correlated with the state of the fields of vision.

CASE 1.—The patient, a man aged 27, formed one of the cases of pituitary tumour which Mr. Eason showed before the Royal Society of Medicine in May, 1913, at a meeting of the combined Sections of Neurology and Ophthalmology.[1] A short summary of the clinical report is as follows: The patient was short and undeveloped, with a lack of hair about his face and pubes. The voice was half broken and high-pitched. He was extremely drowsy and slept most of his time. Weight 7 st. 10 lb. Looked much younger than his age, being almost boyish in appearance. Examination of his eyes showed complete bilateral temporal hemianopia. The fields of vision are given in Fig. 1. Vision: R., 6/36; L., 6/9. The reaction of the pupils to light on both sides was hemiopic. The Wassermann reaction was positive, but treatment with mercury, iodides, thyroid and pituitary extracts resulted in no improvement in vision or in any other way, except that the headache was diminished and the weight slightly increased. A skiagram showed some enlargement of the sella turcica. The blood pressure was found to be 100 mm. of mercury. Latterly he had suffered from severe enuresis. The skin was brownish in colour. A condition of semi-coma prevailed during the last three weeks.

Pathological examination.—Emaciation was marked. There were no bony changes, either atrophy or enlargement, present. The heart weighed 190 grm. and showed an early condition of brown atrophy. The liver weighed 1090 grm. It was

FIG. 1.

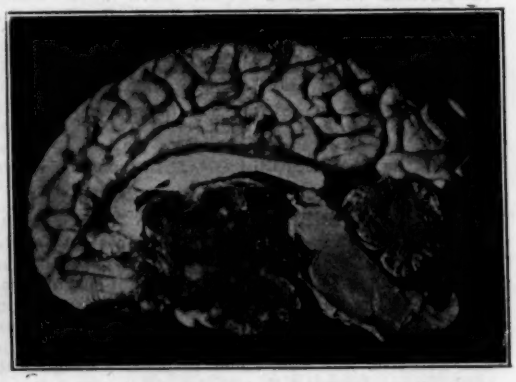


Perimeter chart (Case 1).

FIG. 2.

View of the tumour *in situ* (Case 1).

FIG. 3.



Mesial section through brain and tumour. The capsule of the tumour lies close up against the corpus callosum. The hæmorrhagic cysts are well seen.

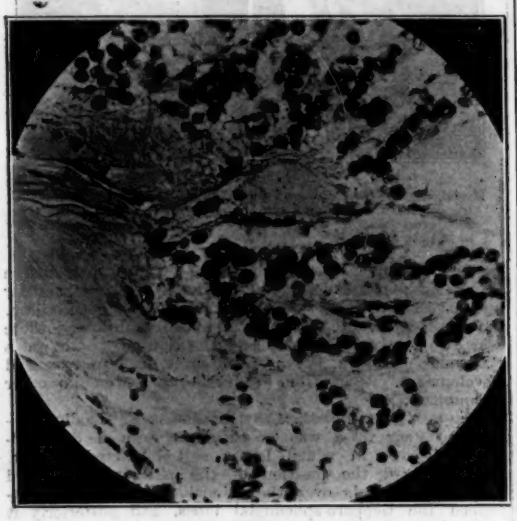
[1] Proceedings, vol. vi., No. 7, p. 7.

pale yellow in colour, and appeared to contain excess of fat. The pancreas (42 grm.), the thyroid (10 grm.), the spleen (102 grm.), the suprarenals (11 grm.), and the kidneys (294 grm.) all seemed perfectly normal macroscopically. The testes were normal in consistency, but were a little small (abstract from Dr. Herbert French's report).

In the position of the pituitary body was found a bright red irregular tumour, contained in a definite tough capsule, and which had numerous white necrotic areas scattered through it, especially towards the centre. The substance of the growth was soft and hæmorrhagic, and contained several cysts filled with altered blood. The appearance of the tumour is shown in Figs. 2 and 3, reproduced from photographs. It completely occupied the interpeduncular space, extending forwards to reach the orbital portions of the frontal lobes, and spreading laterally over the surface of both temporal lobes. Posteriorly, it separated the crura cerebri widely from each other and then extended over them, covering the upper portion of the pons. A mesial section through the brain and tumour shows the basal ganglia and corpus callosum to be displaced upwards. The superior and inferior walls of the lateral ventricles were in close apposition, their cavities being practically obliterated. The pressure on the base of the skull had resulted in absorption of the original bone forming the sella turcica, and only a thin shell of bone still remained surrounding the greater portion of the tumour. The third, fourth, and sixth nerves on both sides were stretched by the growth. The optic chiasma was broken through in such a way that the right and left optic nerves appeared to be direct continuations of their respective tracts. The degenerative changes found in the optic tracts suggest, however, that this destruction of the chiasma was of comparatively recent date. The brain and meninges appeared perfectly normal macroscopically. It was possible to shell out the tumour quite easily from the bed which it had forced for itself in the base of the brain.

Microscopical examination.—Sections were examined of portions of the thyroid, pancreas, suprarenals, liver, and testis. Thyroid: The alveoli appeared well formed and contained the normal amount of colloid. There was no

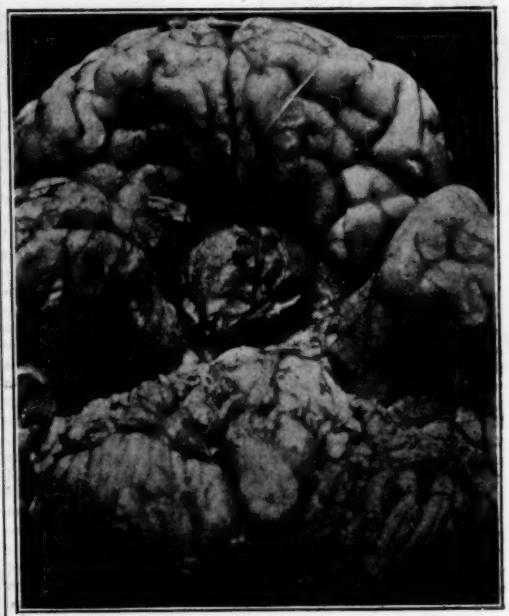
FIG. 4.



The upper portion of the field shows the edge of the growth. The lower portion shows up the capsule being invaded by groups of tumour cells. (Case 1.)

evidence of cell proliferation, and the interstitial tissues were normal in appearance. Pancreas and suprarenals: The structure of these organs was that of normal functioning glands. Liver: Extensive fatty change was present throughout the section, and was confined to the peripheral portions of each lobule. The cells in the centre of the lobule were normal in appearance and there was no cirrhotic change. Testis: The seminal tubules were normal in number and in character. There was a slight increase in the interstitial connective tissue, indicating a very early fibrotic change. Sections were examined with special reference to the condition of the interstitial testicular cells. These were markedly deficient in number. Several sections were examined from various parts of the testicle. Stained with Herxheimer's stain the few interstitial cells present were found to be in a somewhat atrophied state. The pituitary tumour itself under the microscope was seen to be made up of large

FIG. 5.



View of tumour in Case 2. The cyst has been distended with cotton wool to its normal size.

polyhedral cells, the protoplasm of which stained a faint pink and the nuclei a dark blue with the ordinary hæmatoxylin and eosin method. The chromatin granules show up distinctly in these latter. The cells themselves are arranged in long columns, with occasionally a tendency to alveolar grouping, the whole appearance closely simulating the structure of the anterior glandular portion of the pituitary. No colloid material was discovered, and nothing corresponding to the posterior lobe was seen. The vascular spaces characteristic of this organ were well marked, and towards the centre of the tumour they became large hæmorrhagic cysts in which red blood cells were mixed with necrotic tumour cells. Towards the periphery, however, they became smaller and smaller, until when the capsule was reached they ceased to exist. The capsule was thick and consisted of dense fibrous tissue. In numerous places the cells of the growth were extending into the capsule along the lymph channels. (Fig. 4). Its appearance, therefore, was that of a malignant epithelial tumour of the pituitary gland. The entire absence of secondary deposits is noteworthy.

CASE 2.—The patient, an unmarried woman, aged 27, was admitted into Guy's Hospital under the care of Mr. L. A. Dunn. She had had continuous headache for the previous three weeks accompanied by vomiting. The left eye was completely blind, and the vision in the right eye was markedly defective. Both eyes reacted to light and accommodation, but the reaction of the left was very deficient. The patient was seriously ill and died shortly after admission, so that a detailed examination of the eye condition was impossible. She was extremely lethargic. Pulse 56 and low tension. Temperature subnormal. The left eye showed

a definite degree of exophthalmos as compared to the right. Further details have been kindly supplied by Dr. H. J. Henderson and Mr. L. C. D. Irvine, of Amersham, who attended the patient in private. They state that, in spite of her age, menstruation had never occurred. The breasts were undeveloped, and there was complete absence of pubic and axillary hair. Nothing is known of the sugar tolerance, but for some time past she had shown a great partiality for sweet things, and had been used to taking bread and butter thickly coated with brown sugar. A year ago Mr. Arnold Lawson had examined the eyes and found advanced optic atrophy in the left eye. This was confirmed on the examination of the patient here. There was no sugar or albumin in the urine.

Post-mortem examination.—With the exception of the tumour nothing abnormal was found in any of the organs (Dr. Herbert French's report).

The tumour: In the position of the pituitary body, filling up the interpeduncular space, there was a cystic tumour, the relations of which are shown in Fig. 5. It measured ¾ inch antero-porteriorly and 1¼ inches from side to side, and was almost exactly the size of a golf ball. On removal a deep hollowed-out depression was found at the base of the brain. The sella turcica, on which the tumour had rested, was flattened into a shallow concave surface. The vessels of the circle of Willis were present on the lateral walls, indicating that the original cyst had been small enough to be within the circle, and that as it enlarged the vessels became stretched on its outer walls. The optic chiasma lay stretched over the antero-inferior portion of the tumour, and had apparently given way through its centre. The right optic tract and nerve were not much damaged, but the portions of the left optic tract and nerve near the chiasma were pressed out into a wide thin band. The tumour was pressing them down on to the hard bone at the base of the skull. On the other hand, the third and fourth cranial nerves, lying between the tumour and the soft structures forming the base of the brain, showed little or no flattening. On being cut through the tumour was seen to consist of one large cyst composed of two loculi, which communicated freely with each other, and they contained a thin reddish fluid. The wall of the cyst was tough and fibrous, and scattered over its surface there were four or five small masses of a reddish glandular substance closely similar in appearance to the anterior pituitary lobe. The largest was of the size of a pea and the smallest about half this size. In addition there were still smaller masses of the same nature to be found scattered over the surface. The larger ones are shown in Fig. 6, which is about natural size. It also shows

FIG. 6.

From a photograph (actual size) of the tumour in Case 2, showing the glandular masses in the capsule.

the division into two loculi—the large one which formed the main portion of the cyst, and the smaller one which occupied the right anterior angle of interpeduncular space.

Macroscopically the brain was normal in every way, with the exception of a slight degree of dilatation of the lateral ventricles. Under the microscope the cyst wall was seen to consist mainly of laminated fibrous tissue. Everywhere between the laminæ were to be seen small collections of cells, which in places were aggregated to form the red glandular masses already referred to. The arrangement and character of these cells to all appearances were those of the anterior lobe of the pituitary. Large spaces packed with red blood corpuscles lay between the columns into which the cells were arranged, and in places large hæmorrhages were present. The cells themselves were polyhedral or oval in shape, and had large dark nuclei. The majority were chromatophobes, but several approximated to the chromatophilic type. More externally they showed the same tendency to infiltrate the layers of the cyst wall, as was seen in the first tumour. It can only be described, therefore, as of the same nature—viz., a malignant epithelial tumour of the pituitary gland, with complete absence of secondary deposits.

CASE 3 (Specimen No. 2876 in Guy's Hospital Museum).—The patient was a male, aged 23, who died in 1883. He had been under the care of the late Dr. F. W. Pavy and Dr. Frederick Taylor. There was a history of a head injury

FIG. 7. FIG. 8.

Medial view of No. 2876 showing the capsule of the tumour lying just beneath the corpus callosum as in Case 1.

View of the left half of the brain. No. 2876, showing the position and appearance of the tumour.

and concussion 15 years previously. Three years before admission he had had vertigo and frontal headache, and for the last 18 months the vision in the left eye had been failing. On admission the left eye was completely blind, and there was also partial loss of vision in the right eye. He was a dark muscular man, but no mention is made as to sexual development. Apart from headache, there were no other symptoms.

Post-mortem examination (by Sir James F. Goodhart).—The pituitary fossa was enlarged to form a diamond-shaped space, in which lay a soft lobulated tumour. This occupied the position of the pituitary body and extended forwards over the ethmoid; laterally it overlapped the temporo-sphenoidal lobes, and posteriorly it covered over the upper part of the pons. On the left side the optic nerve and third, fourth, and fifth nerves were pressed into flattened bands. On the right side the optic nerve and third nerve were lost in the tumour, while the fourth and fifth nerves were stretched over it. The other cranial nerves were unaffected. (Figs. 7 and 8.) The tumour itself was more or less circular in outline and measured 2½ inches across. On section, thick cream-like material oozed away, leaving numerous cystic cavities with ragged walls.

Under the microscope the tumour was found to consist mainly of cellular elements, the cells being the chromatophilic type, though somewhat smaller than the cells in the two previous tumours. With the exception that there is much less stroma present, the general appearance, however, closely approximates to them. There is the same tendency for the cells to form columns and an alveolar arrangement, and also for those on the periphery to infiltrate the layers of the capsule. (Fig. 9.) With the other two, therefore, it must

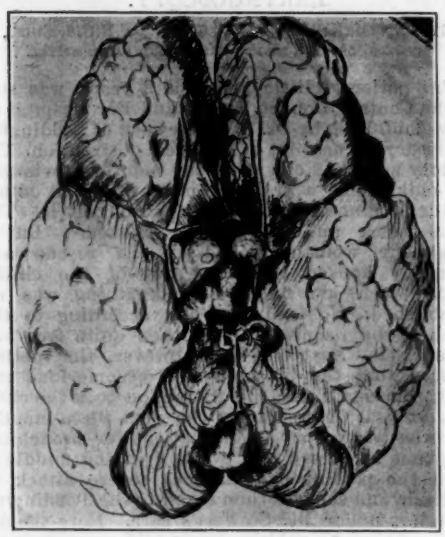
FIG. 9.

Reproduction of a photomicrograph of No. 2876 showing cells at the edge of the growth infiltrating the capsule.

be classed as a malignant epithelial tumour of the pituitary gland, showing no tendency to form secondary deposits.

CASE 4 (Specimen No. 2875 in Guy's Hospital Museum).—The patient was a male, aged 45, who died in Stephen Ward in 1877. He had been under the care of Dr. Samuel Wilks. He was a thin, wasted man. Three weeks before admission

FIG. 10.



Reproduction of a drawing of the brain by Mr. Hamersley in the original post-mortem report (No. 2875). The tumour is largely hidden by the two swollen optic nerves.

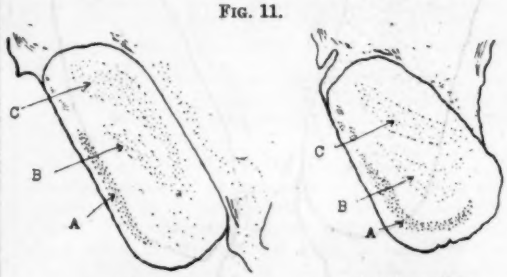
he was seized with fits which were followed by left hemiplegia. On admission there were loss of memory, occipital headache, and nausea, but no vomiting. The vision was dim, but no definite optic neuritis or optic atrophy was present. The left external rectus muscle was paralysed. The patient was often delirious.

Pathological examination.—The ventricles of the brain were slightly dilated and contained turbid fluid. At the base of the brain was a large gelatinous tumour which was in direct continuation with a somewhat enlarged pituitary body. The bone in the pituitary fossa is flattened out and partly absorbed. The tumour measured 1½ inches long by 1 inch broad and 1 inch thick. The optic commissure is stretched over it anteriorly, and the optic nerves, as seen in Fig. 10, are swollen up into two large swellings half an inch in diameter. Laterally and posteriorly the tumour is bounded by the crura cerebri. There was a patch of growth in the apex of the lower lobe of the left lung consisting of spindle cells arranged in loculi. Histologically the tumour showed a relatively large amount of fibrous stroma in which lay groups of cells, the majority of which were columnar in shape, a few being polyhedral. There was much mucinous material scattered through the section and several goblet cells were to be seen, which would suggest a possible origin from nasal mucous membrane. Its characters were those of a malignant columnar-celled growth. The secondary deposit present in the apex of the lower lobe of the left lung showed similar histological appearances.

The examination of the visual system of nerve fibres and cells.—The left side of the brain in Case 1 was sectioned and utilised for this purpose. A reference to Fig. 1 illustrating the fields of vision will show that the optic fibres destroyed by the tumour are confined to the nasal half of the retina—i.e., the temporal half of the field of vision. And, further, that a portion only of these fibres are affected. From this it might be expected that the degeneration present in the optic tracts would be extremely limited and circumscribed.

The optic tracts.—The accompanying drawings (Fig. 11) of the left optic tract, however, made from

FIG. 11.



Posterior portion. Anterior portion.

Left optic tract, Case 1. Weigert-Pal preparation.

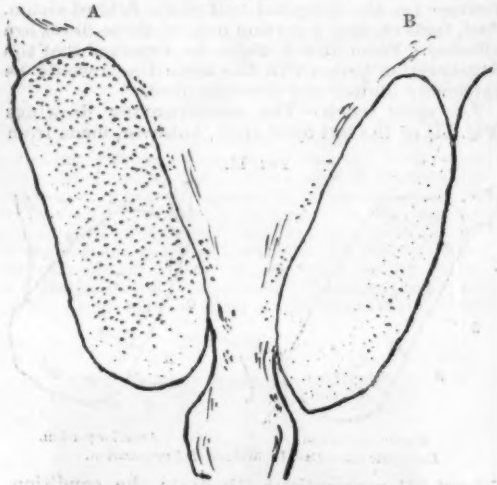
Weigert-Pal preparations, illustrate the condition actually found. A narrow band of fibres (A) occupying the outer portion of the tract alone stain normally. Two other bands of fibres (B) and (C) also stain, only less distinctly. The remainder of the tract is completely degenerated. The degenerated area can be described as occupying mainly the central and lower part of the tract. This agrees with Henschen's conclusions as to the position of the nasal fibres in the optic tract. The fibres which stain normally (A), however, which are from the temporal side of the retina, are found lying in the external and lower portion of the tract and not in the superior and external position which he describes.

A comparison of the two drawings will further show that the relative position of the fibres remains approximately the same along the whole length of the tract. The first section is taken from the anterior part of the tract and the second from the region of the external geniculate body. Sections taken through the subthalamic region still showed

the degeneration in the optic tract fibres as they entered the external geniculate body and the pulvinar. In this region no particular zone was degenerated; the affected fibres seemed to be scattered amongst those which stained normally. Preparations stained by Marchi's method show the presence of early degeneration amongst those fibres which stain normally with the Weigert-Pal method.

The cortical visual fibres.—Attention was next directed to the state of those fibres which after the relay of the optic tract fibres in the external geniculate body continue the visual impulses to the occipital cortex. No change could be demonstrated. The sections through the optic radiations, stained by Wiegert-Pal, were quite normal. Similarly, no change could be found in these fibres when traced to their termination in the cortex surrounding the calcarine fissure. Sections of this cortex were then stained by Nissl's method and the large stellate cells in the fourth layer—i.e., those concerned with the reception of the visual impulses—were examined. It cannot be said that there was any deficiency in the number of these cells or in their size. It was, however, found that a certain proportion of them exhibited chromatolytic changes, but this did not occur in any definite grouping.

FIG. 12.



Left (A) and right (B) optic tracts in Case 2. Weigert-Pal preparations.

The fibres concerned with the reaction of the pupils to light.—The presence of the hemiopic pupil suggested that this case might throw some light on the question of the course which these fibres take. Serial sections of the posterior thalamic region and the mid brain were accordingly cut and compared with normal preparations. The path described by Meynert—i.e., fibres running dorsally to the anterior corpora quadrigemina, relaying in these bodies and continuing by means of new fibres which end in the oculomotor nucleus—did not give any evidence of degeneration. Similarly, the investigation of the path described by Darkschiewitsch and Mendal—i.e., fibres running to the ganglia habenulæ and continuing by new fibres which reach the oculomotor nucleus *vid* the posterior commissure—also led to negative results. As, however, the majority of pupil fibres were unaffected in this case, and, further, that either theory states that the degenerated fibres end in cell relay stations in the neighbourhood of the primary optic ganglia, this result is not surprising.

In Case 2 the optic chiasma, although severely compressed, was not broken through as in Case 1. Primary optic atrophy had been observed clinically in the left eye but not in the right. The condition of the optic tracts was as follows. The left optic tract was quite normal with the exception that a few degenerated fibres were found occupying its lower border. This area is indicated in Fig. 12. The right optic tract, on the other hand, was found to show marked degeneration very similar to that present in the other case. A band of fibres situated in the outer and lower part of the tract are seen to be unchanged, although even they do not take the stain as well as do perfectly normal fibres. The remainder of the tract is completely degenerated.

Conclusions.—The only change, therefore, which it has been possible to demonstrate in the visual fibres as a result of a lesion of the optic chiasma—which had caused eye symptoms in both cases for upwards of two years—is a degeneration in the optic tracts. This degeneration was not found extending further back than the primary optic ganglia. The amount of change present in one case was more than was indicated by the visual loss. The statement that certain optic fibres reach the occipital cortex without relaying in the cell stations in the primary optic ganglia would appear to be refuted by the fact that no degeneration was found in the optic radiations and the fibres entering the calcarine cortex. Finally, both cases show that the uncrossed visual fibres tend to occupy the outer and lower portion of the optic tracts.

REMOVAL OF A FOREIGN BODY FROM THE LARYNX BY SUSPENSION LARYNGOSCOPY.

BY DAN McKENZIE, M.D. GLASG., F.R.C.S. EDIN.,
SURGEON, CENTRAL LONDON THROAT AND EAR HOSPITAL.

THE patient, a little girl aged 2 years, was sent to the Central London Throat and Ear Hospital on May 22nd, 1914, by Dr. A. G. Stewart, of Paddington Infirmary, on account of laryngeal obstruction. The history was that one day, four months previously, the child made a grab at a piece of rabbit on her mother's dinner-plate and tried to bolt it. The mass stuck and the child "choked." But a neighbour woman rushed to the rescue and promptly hooked the meat out of the child's throat with her finger and breathing was re-established. Not only so, but, according to the mother, the respiration was then quite free and unimpeded. Next morning, however, the mother noticed that the breathing had become loud and stertorous again and she thereupon took the child to a hospital where during the next three months she was treated as an out-patient for bronchitis. At about 10 o'clock one evening in the middle of April the patient had another severe attack of asphyxia and she was then taken to the Paddington Infirmary under Dr. Stewart's care. Here she did have genuine bronchitis, being laid up with it for about a month, and during this illness she was also for several days unable to swallow and had to be fed with a nasal tube. While in the infirmary a search was made for a foreign body in the larynx with X rays (screen examination), but nothing definite could be made out.

On May 22nd I saw the baby for the first time; the laryngeal stridor was audible several yards off, and each intake of breath was accompanied by considerable recession of the suprasternal and supraclavicular fossæ and of the lower sternal ribs. There was a complete absence of phonation but no cyanosis, and the baby seemed to be bearing her misfortunes with extraordinary calmness. That there must be a piece of rabbit bone in the larynx was abundantly evident from the history of the case and from the physical signs, and so the child was at once admitted to hospital, and next morning (May 23rd), Mr. Archer Ryland and Dr. H. Huff-Johnson assisting, tracheotomy was first of all performed, without any anæsthetic, and then recourse was had to the Killian suspension apparatus for the purpose of investigating the larynx. This procedure occupied about an hour, chiefly because of the difficulty of getting beyond a short pendent epiglottis which kept slipping away from the epiglottis retractors. And it was not until I abandoned these aids and used a long stout probe to hold up the epiglottis that I could get a view of the larynx beyond. Even then all that could be seen, as it happened, were two tiny arytenoid eminences and two puffy ventricular bands in almost constant apposition with each other. Once, indeed, I was able to catch a glimpse of a whitish substance in the larynx, but could not be sure that it was not simply mucus. Owing to the swelling of the interior of the larynx, and owing to the presence of the laryngeal reflex, the child not being under an anæsthetic, it was, in short, impossible to see whether a foreign body was present or not. However, fortified by the facts of the history, I determined to push my explorations. A pair of direct laryngeal forceps was passed open into the larynx and a cautious search made in the neighbourhood of the glottis. The first attempt drew blank, but on the second I had the satisfaction of feeling the jaws of the forceps close upon a hard substance which I rotated a little to loosen from its attachments and then successfully removed. It proved to be the

piece of rabbit bone I had been looking for. The shape and dimensions of the foreign body are well shown in the accompanying illustration, and the impaction in the larynx is easily understood when one notes its sharply pointed shape.

The child did very well. The tracheotomy tube was removed a week later, after the laryngeal inflammatory obstruction had subsided, and the patient can now phonate after four months' silence.

The case is interesting for many reasons. First of all, the history showed that a foreign body had been left behind in the larynx after the plug of meat had been removed, and that it was causing recurrent attacks of laryngeal inflammation. Secondly, the case exemplifies the extraordinary tolerance of the air-passages to foreign bodies, as contrasted with the œsophagus. In this case the spicule of bone had been impacted in the larynx for four months. Lastly, we have here an instance of the successful application of suspension laryngoscopy. This, according to Professor Killian's remarks at the recent Semon lecture, makes only the fifth case so far recorded of a foreign body being removed with the aid of suspension laryngoscopy. The others were by E. D. Davis,[1] by Weingärtner, by Seiffert, and by Iglauer.

[1] Journal of Laryngology, Rhinology, and Otology, April, 1914, p. 206.

With regard to the efficacy of the suspension method in this case the opinion formed by us at the operation was that by no other bloodless means could the larynx of so young a child have been exposed so fully. Indirect examination with the mirror in such cases is obviously *hors de concours*, and the only comparison to be made is with direct examination through the laryngeal tube spatula. Tubal examination would have revealed as much perhaps, but when it came to operation the manipulation of the direct forceps through the narrow infantile tube would have been very awkward and difficult, both because the space is restricted and because vision is necessarily monocular. By the suspension method, on the other hand, ample space was provided for the passage of instruments and that with the ease and confidence binocular vision always brings to the operator, for by this method not only can we work with both hands but we can see with both eyes. It is to be noted that the epiglottis elevators supplied with the apparatus proved, in this case, to be useless, and after the waste of much time and energy I had to give them up and to use instead a long stiff probe held in my left hand.

Another point worthy of attention is that, following Chevalier Jackson's practice, I operated on the child without an anæsthetic of any kind whatever, general or local, and the patient did not seem to object in the slightest. Even the tracheotomy evoked little or no protest, and during the greater part of the suspension period of the operation the patient slept quite peacefully.

Brook-street, W.

Reviews and Notices of Books.

Plague and Pestilence in Literature and Art.

By RAYMOND CRAWFURD, M.A., D.M. Oxon., F.R.C.P. Lond. Oxford: At the Clarendon Press. 1914. Pp. 223. Price 12*s.* 6*d.* net.

IN his admirable "Latin Literature" Dr. J. W. Mackail, speaking of Celsus, says: "It seems most reasonable to suppose that Celsus was one of a class which is not after all very uncommon—doctors of eminent knowledge and skill in their own art, who at the same time are men of wide culture and far ranging practical interests"; and we can confidently assign Dr. Crawfurd to this category, even though his knowledge is not so encyclopædic as that of Celsus, who, besides being learned in medicine, was recognised as an authority on agriculture and military tactics.

The substance of the work before us represents the FitzPatrick lectures delivered by Dr. Crawfurd in the year 1912, and deals with a subject full of interest from many points of view. Epidemics bring out both the best and the worst side of human nature. If on the one side may be set the devotion of attendants on the sick, of whom Lucretius speaks so pathetically (vi. 1243)—

Optimus hoc leti genus ergo quisque subibat,

the heroism of clerics such as Mompesson, the rector of Eyam, and of his flock in the seventeenth century in England, or of Belzunce, Bishop of Marseilles, in the eighteenth, of physicians such as Hodges, and apothecaries such as Boghurst, in 1665; on the other may be set the defection of Galen during the Antonine plague A.D. 165–180, and of Sydenham and Morgagni some 1500 years

later, and the outbreaks of cruelty and superstition which led to massacres even as late as 1771. The great pestilences worked such appalling damage that men's minds failed them for fear, and even the medicine of the time, such as it was, stood aghast, to quote Lucretius again (vi. 1177)—

Mussabat tacito medicina timore.

Dr. Crawfurd discourses learnedly on the many epidemics of pestilence, beginning with the Iliadic plague. This epidemic was probably true plague and not typhus fever, for it is expressly mentioned as affecting the mules and dogs of the camp first. On the other hand, Dr. Crawfurd takes the view, giving his arguments at length in an appendix, that the great plague of Athens, described by Thucydides and later by Lucretius, was typhus fever.

The origin of pestilence was naturally enough ascribed in early times to the anger of the gods for sins, general or particular; thus in Homer the sin was the ravishing of Chryseis, daughter of the priest of Apollo, and in much later times, although the idea of divine anger had not altogether passed away, pestilence was considered to arise from earthquakes which liberated poisonous vapours, or from the dust thrown up by volcanic eruptions. Lucretius ascribed diseases to noxious particles carried in the mists and winds, and Varro, whom Dr. Crawfurd quotes on p. 61, attributed disease in animals to the presence of "animalia quaedam minuta, quae non possunt oculi consequi."

The origin of the great Antonine plague, according to the story related by Julius Capitolinus,[1] was that it was brought to Rome by the soldiers returning from the expedition to the East commanded by the Emperor L. Verus. Some of the troops broke into a temple of Apollo and destroyed a golden chest found therein. From this chest, "spiritus pestilens evasit, atque inde Parthos orbemque complesse." Capitolinus goes on to say that this outrage was not the fault of Verus but of Cassius, who sacked the city of Seleucia in defiance of a treaty, so that here again we see the idea of pestilence as a punishment for wrongdoing.

Ammianus Marcellinus (the reference is xxiii. 6, not xxiii. 7, as given in Dr. Crawfurd's book) tells practically the same story, except that he says that the pestilential vapour escaped from a hidden chamber which the soldiers broke open in the search for treasure. Vapours escaping from chinks in the earth or from caves were always suspected of producing evil results, and Ammianus, a little earlier in the chapter just mentioned, tells of a chasm in the earth in Assyria, close to the lake called Sosingiten, from which a "halitus letalis" escaped having an offensive smell that destroyed any animal standing near it. He mentions another place near Hierapolis in Phrygia from which a "noxius spiritus" came out, which injured all except eunuchs who came near, and he makes the curious comment, "Quod qua causa eveniat, rationibus physicis permittatur." Is it possible that this tradition is due to some connexion with the sterilising effects of radio-activity? Another story about pestilence being spread by an exhalation from a cave is given by Servius in his commentary on Aen. xi. 785, which is interesting on account of the way in which the plague was stayed—namely, by the affected tribe imitating wolves, i.e., living by plunder and foray. Dr. Crawfurd takes his readers through the ages with pestilence stalking over the earth, the great Byzantine plague which lasted for 52 years, beginning in Antioch in A.D. 540 and reaching Strasbourg in 591. Its presence in Rome in 590 gave rise to the dramatic vision of Pope Gregory, who saw the angel sheathing his flaming sword while standing on Hadrian's Mole, now the Castle of St. Angelo. In 680 another severe pestilence affected Rome, and it was in this one that Sebastian became the plague saint, which he has ever since remained. The other important plague saint in the West was St. Roche, and in the East St. Pantelmon, who naturally enough from her commerce with the East was also a favourite in Venice.

We have not space to follow Dr. Crawfurd all through his researches into the art and literature of pestilence, but his work is extremely interesting and admirably done. In one point we beg leave to differ with him, and that is where he says that the "Dances of Death," most of which date from the fifteenth century, were the descendants of the Etruscan and other funeral dances. These latter were joyful dances, while the fifteenth century Dance of Death was emblematic of the universal power of death and took the gloomy view. We fancy that Ruskin is near the truth in his opinion that the Dance of Death was the outcome of the unsettling of men's minds and the break up of the old faith at the Reformation.[2]

We offer our cordial thanks to Dr. Crawfurd for a delightfully written book.

[1] Vita Veri in Hist. August.

Abhandlungen aus dem Gebiete der Geburtshilfe und Gynaekologie.

Herausgegeben von Professor Dr. W. TAUFFER, Director der Frauenklinik der Königl. Ung. Universität zu Budapest. Band II., Heft 2. Berlin: S. Karger. 1913. Pp. 417.

THE major part of this publication consists of a monograph by Dr. Scipiades, in which he considers in great detail and in a most painstaking manner the various complications which can occur in a case of pregnancy complicated by a myoma of the uterus. The monograph extends over some 375 pages, and the author discusses the subject very fully. He considers in turn pregnancy with a myoma of the uterus, labour under the same conditions, and lastly the puerperium. The first part of the monograph, published in 1912, dealt with the relation between myomata of the uterus and sterility.

There is a vast amount of information contained in this work and the author has expended immense labour in collecting cases and histories. If we consider only the simple question of the presence of symptoms in these cases we shall get some idea of the completeness of the work. The author concludes that 82·8 per cent. of patients pregnant with a myomatous uterus complain of symptoms, and that in some 91 per cent. the symptoms are due to the presence of the tumour. The most frequent complaint, occurring in some 34 per cent., is that of pain. The questions as to the nature of the onset of the pain, its course, its degree, its character and localisation, are all discussed in turn. The next most common complaint after that of pain is some alteration in the abdominal girth. In 28·5 per cent. of the cases the symptoms are due to interference with the functions of the neighbouring viscera, and in 7·6 per cent. there are constitutional changes directly due to the presence of the tumour

[2] Modern Painters, vol. v., cap. iv.

itself. Every other possible complication that may occur in connexion with a fibroid tumour associated with pregnancy is discussed in the same thorough way. The author has summarised not only his own experience, but also all the information contained in the literature of the subject, and the result is a piece of work of much value.

There is also an article by the same author on the operations of hebosteotomy and extraperitoneal Cæsarean section.

Leitfaden für das Embryologische Praktikum, und Grundriss der Entwicklungslehre des Menschen und der Wirbeltiere.

Von Professor Dr. ALBERT OPPEL. With 233 illustrations in the text. Jena: Gustav Fischer. 1914. Pp. 314. Price 9 marks.

THIS book forms a guide for the student and practitioner to the study of practical embryology. The first part deals with the general principles of the subject and the aim and methods of practical embryology. A consideration of evolution, epigenesis, development and growth, some factors influencing development, methods of obtaining embryological material, technique, and a description of various experiments which may influence development follow.

The second part of the book deals with the ovum and spermatozoon, fertilisation and segmentation, and the development of the three primary layers of ectoblast, mesoblast, and endoblast. There is also a very good account of the formation of the membranes and placenta. The third part forms a most interesting atlas of serial sections of the early stages of development in the embryo of the toad, frog, blind-worm, fowl, rabbit, pig, and man. The fourth part deals very clearly and well with the development of the various organs and tissues derived from the three primitive layers. A good index and glossary with a full bibliography complete a useful book.

Anæsthetics: Their Uses and Administration.

By DUDLEY W. BUXTON, M.D. Lond. Fifth edition, enlarged. London: H. K. Lewis. 1914. Pp. xiv.–477, with numerous illustrations. Price 10*s.* 6*d.* net.

THIS well-known text-book is brought thoroughly up to date in the present edition, and Dr. Dudley Buxton is to be congratulated on the production of a very complete and authoritative work. The references and footnotes show clearly how much labour has been expended in order that nothing might be overlooked which was worthy of note, and the author does not unduly press his own views as against those he quotes from other authorities. Thus his advocacy of the dosimetric administration of chloroform by the Vernon Harcourt inhaler, familiar to all students of anæsthetics, is not too prominently vaunted, and the simpler methods receive adequate consideration. Dr. Buxton still recommends, we notice, induction by gas and ether as a preliminary to chloroform and to open ether. Many anæsthetists hold that the use of a closed inhaler, even for a short time early in the administration, is detrimental to perfectly quiet respirations later on, at any rate in abdominal cases; but no doubt Dr. Buxton's experience leads him to prefer the quick induction, and his liking for giving oxygen with his anæsthetics probably enables him to counteract what might be the baneful influence of a "closed" induction.

The historical chapter in the book is very fully written, and includes an interesting account of the part that hypnotism has played in the evolution of anæsthetics, and in his medico-legal chapter the author discusses almost every conceivable question that could arise from the ethical or legal aspect of anæsthesia. The chapter on local analgesia of all kinds is particularly well illustrated with diagrammatic anatomical plates.

In a book of such high general excellence it is permissible to point the finger of criticism at any slight defect, and we would traverse the author's statement that "phthisical persons will take nitrous oxide and ether without detriment," even though it is qualified by the reservation "when the coexistent bronchitis is not severe." We believe that in such cases ether from a closed inhaler should be altogether avoided. Again, in the conduct of intranasal operations by means of nitrous oxide and ether when more than one application of ether is necessary, Dr. Buxton recommends waiting for return of consciousness before making the second application. We do not believe this to be the best practice, nor is it in accordance with the level continuity of anæsthesia that the author recommends elsewhere in his book.

Lectures on Dietetics.

By MAX EINHORN, M.D., Professor of Medicine at the New York Post-Graduate Medical School. London: H. K. Lewis. 1914. Pp. 156. Price 4*s.* net.

A GREAT physician, not long dead, used to say that the best book he knew on dietetics was the "Physiologie du Goût," and in these days of wordy conflict between food faddists and food theorists we might well be tempted to go back to Brillat-Savarin and learn the secrets of eighteenth century French gastronomy, derived largely from centuries of experience under the oldest civilisation in the world in the Far East.

The common sense of the old Gascon lawyer is reflected in these lectures. Addressed to graduates, they assume a sufficient knowledge of the chemistry and constituents of food and of the physiology of digestion. Plunging at once into the question of digestibility, Dr. Einhorn warns us that the time required for breaking up food in the stomach is no real guide, as in reality the main place for digestion is in the small intestine. We are no longer dependent on the observations of Beaumont on his case of gastric fistula, but have a far larger range of observation from lavage of the stomach after test meals, as practised by Leube and Penzoldt. Professor Einhorn would shock many by some of his dicta. In health he advises us not to be afraid of foods that are not easily digested, as the stomach and duodenum lose digestive capability if they are pampered too much. He considers it may be as disadvantageous to eat too slowly as to eat too fast, but this fault is rare. "Live sensibly, and have a good meal, and a little conversation with your meals," and have a wait between the courses; this is sound and pleasant advice.

In his chapter upon diet in acute disease the general advice given is interesting, for Professor Einhorn has the courage to discountenance low feeding, especially in enteric fever. But in his remarks on this disease he exhibits a deficient knowledge of its history and of Graves's position in the matter of "feeding fevers." When Graves propounded his aphorism he was not aware of the distinction between "typhoid" and "typhus," or

that the former was an affection of the bowels; ulceration of Peyer's patches from the irritation of undigested masses of food was not known to the medical profession in 1843, when Graves's lectures were first published.

There are many excellent dietaries given, and an interesting chapter on the uses and methods of duodenal feeding concludes a volume which for sound judgment can be highly recommended.

Taschenbuch der Augenheilkunde für Ärzte und Studierende.

Von Dr. CURT ADAM, Privat-docent für Augenheilkunde an der Universität, Berlin. Berlin und Wien: Urban und Schwarzenberg. 1914. Pp. 395. Price 8 marks.

THE scope of this book is described in the introduction, where two "childishly easy methods of investigation of the greatest value" are described. These are the method of oblique illumination and that of transmitted light, or what is often called the distant direct method. It is expressly stated that only those diseases of the eye which can be diagnosed without the use of the ophthalmoscope are at all fully dealt with; there is, however, a short section on intraocular diseases.

The book is clearly intended primarily for general practitioners, but it will be found well worthy of study by ophthalmologists. Particularly useful for the latter are the 40 pages in which modern methods of general treatment are discussed. They give an excellent résumé of the diagnosis and treatment of syphilis and tuberculosis, and of the use of sera, radium, electricity, and so on. The "special" part on external diseases, iritis, glaucoma, and squint, though rather telegraphic in style, is characterised by the accuracy of its statements, the lucidity of the exposition, the emphasis of important diagnostic features, and the adequacy of its advice on treatment. Thirty pages are devoted to injuries of the eyes, and 20 pages to workmen's compensation. The regulations as to sight in the German and Austrian armies are given. Finally, there is a useful compendium of prescriptions. The book has been translated into English, French, Italian, Russian, and Spanish, and can be cordially recommended.

Medical and Sanatorium Benefit Regulations, &c.

Edited by J. HENRY LLOYD for Charts, Limited. London: Sir Isaac Pitman and Sons, Limited. 1914. Pp. 232. Price 5*s.* net.

THIS is a volume containing the full text of the clauses in the Insurance Acts and in the Regulations made under them concerning medical and sanatorium benefits, together with the principal memoranda and circulars dealing with these subjects that have been issued by the Insurance Commissioners. A system of classification has been adopted which has for its object the rendering readily accessible of any information sought for by medical practitioners, druggists, members of Insurance Committees, and others, who in the course of their duties may have rapidly to look up some point in connexion with National Health Insurance. For this object four varieties of type are used, so that anyone who has once made himself familiar with the book may know at a glance whether the passage he is reading is part of a section of a statute, of a regulation or order of the Commissioners, of an explanatory memorandum, or of an editorial note.

The system of classification referred to above appears to fulfil its object adequately in keeping all the information likely to be required upon any subject within the group to which that subject naturally belongs. There are seven such groups, and on the page which contains a list of them each title is distinguished by a brightly coloured border, the colour being repeated on tabs so placed as to guide the reader to the commencement of each article. Such a method of arrangement has considerable merit. It is essentially a matter of charting, and familiarity with the chart is necessary before it can be made use of; but we have little doubt that anyone who has once learnt his way about in the volume under review will find it useful as a work of rapid reference. It will also be an advantage to him to have what there is concerning the subject which he wishes to study given in full without abbreviation or paraphrasing.

It is regrettable that the issue of regulations and memoranda relating to national insurance has been so rapid and constant that any collection of them, though complete when first issued, has been apt to become obsolete, necessitating continual noting up and additions. The early period of the working of the Insurance Acts is, however, now over, and the inconvenience referred to must necessarily be less in future than it has been hitherto.

The Science and Practice of Dental Surgery by Numerous Authors, with an Appendix on Dental Jurisprudence.

Edited by NORMAN G. BENNETT, M.A., M.B. Camb., L.D.S. Eng. (Oxford Medical Publications.) London: Frowde and Hodder and Stoughton. 1914. Pp. 797, with 993 illustrations. Price £2 2*s.*

A TREATISE on any subject which is the combined work of many authors must necessarily have, as is admitted in the preface to this book, certain defects. The principal defect in this volume is that certain of the articles are contributed by authors showing a thorough grip of general pathology, while others are written by those who apparently do not possess that knowledge or, if they do, are unable to express it in their contributions. In certain of the articles the writing is clear and lucid; in others the meaning is often extremely ambiguous. Another defect is the unequal consideration given to the different subjects; for example, irregularities of the teeth are very fully treated, but the important questions of caries and chronic general periodontitis are not discussed in a manner commensurate with their great importance.

Recent advance in dental science has shown the relationship between dental sepsis and general disease, and the object of modern treatment in dentistry lies in the direction of avoiding methods likely to lead to sepsis. One is therefore surprised to find such a full account of crown and bridge work, and in the article dealing with the latter subject types of apparatus are illustrated which cannot fail to produce stagnation areas, forming foci of infection. We trust that the editor in the next edition will remedy this defect and allow the general scheme of the work to be in keeping with modern ideas. There is much, however, in the pages of this volume which is excellent, more particularly the section on the etiology of irregularities of the teeth, contributed by Mr. Norman Bennett, the various sections written by Mr. J. G. Turner, the article on odontomes by Mr. W. W. James, the chapter on the etiology of caries by Dr. J. Sim

Wallace, and the lucid exposition of oral sepsis and its effects by Dr. Stanley Colyer.

The printing and general "get-up" of the book are good, and a word of praise is due to Mr. Bennett for the able way in which he has carried out his task as editor. A useful bibliography is added to each chapter. The index is insufficient.

LIBRARY TABLE.

Plain Rules for the Use of Tuberculin. By R. ALLAN BENNETT, M.B. Lond., Physician in Charge, Devon County Council Tuberculosis Dispensary. Bristol: John Wright and Sons, Limited. 1914. Pp. 48. Price 2*s.* 6*d.*—The employment of tuberculin in the treatment of pulmonary tuberculosis still has many opponents, whilst other physicians are enthusiastic as to its benefits. We have no intention at the present time of discussing the various arguments which have been brought forward on either side, but the book now before us touches on some of the more important points, and for the most part we can endorse Dr. Bennett's views. We quite agree with him when he remarks that in estimating the value of any remedy it is first of all necessary to be sure that one is dealing with the particular disease against which the treatment is directed, and further we uphold his statement that the presence of tubercle bacilli is the only sure and certain sign of the existence of active tuberculosis in the patient. The deductions to be derived from the employment of tuberculin for diagnostic purposes are open to many serious fallacies; all that the "reactions" can prove is that the individual so tested has had at one time a tuberculous focus and that he possesses a certain acquired immunity to the disease. The series of cases described in this book illustrates the effect of tuberculin as it can be given to ordinary working-class out-patients. It thus illustrates what might be carried out in dispensaries under the National Insurance Act. The method adopted has been to give the tuberculin at intervals of from six to seven days, the doses being so graduated that focal reactions only are produced, general reactions being studiously avoided. This plan has commended itself to a large number of physicians. Details of technique are then given, which can be readily followed, the dosage being especially discussed. Dr. Bennett expresses himself in moderate terms, which commend themselves to the reader. We think, however, that some comments should have been made on rises of temperature due to auto-inoculation; unless recognised the occurrence of excessive auto-inoculation in a course of treatment with tuberculin may easily conduce to error. The author has succeeded in condensing a large amount of information into small space, without detracting from the directions necessary to the successful administration of tuberculin.

Communicable Diseases: an Analysis of the Laws and Regulations for the Control thereof in Force in the United States (Public Health Bulletin, No. 62). Prepared under the direction of the Surgeon-General, United States Public Health Service, by J. W. KERR, Assistant Surgeon-General, and A. A. MOLL, A.B. Washington: Government Printing Office. 1914. Pp. 699. Price, paper, 50 cents.—This Bulletin is intended as a sequel to Bulletin No. 54, which described the provisions governing health organisation in the United States. It is considered a conservative estimate that at least 25 per cent. of deaths occurring in the United States have communicable diseases as their direct or immediate cause. That implies over 3,000,000 cases of preventable diseases yearly, with 300,000 deaths. The history and present status of the Federal laws are first given, and are followed by a comparative account of the regulations in regard to infectious diseases in the various States under such heads as mode of investigation, quarantining, hospitals, disinfection, expenses, disease carriers, food, hotels and restaurants and so forth, travel, public assemblies, school inspection, jails and other public buildings, industries, penalties, &c. There is an appendix of court decisions on the subject. This occupies the first 261 pages. Pages 262 to 665 are taken up with the text of the Federal and State laws, while pp. 667 to the end (p. 699) are occupied by a very complete index. Those specially interested in infectious diseases, public health and school medical officers, and many others may find it a useful work of reference.

Principles of Property. By J. BOYD KINNEAR. London: Smith, Elder, and Co. 1914. Pp. 152. Price 1*s.* net.—At the present time it is good for all of us to understand the fundamental principles of the doctrine of private property whether as regards property in general or as regards property in land. The class which possesses property in land is an extraordinarily small one in comparison with the population of this country, but the possession of the land means so much to the country that all of us should know something about the rights of tenure in land, its values, and the payments entailed by its possession. On these things depends so much alike of our national income and of the potential wealth of our country. Mr. Boyd Kinnear, in a brief attempt to show the logical consequences of the principles as at present established, has managed to be extremely clear upon a very complicated and difficult subject, and the brevity with which he has been able to set out, for example, the arguments for and against the nationalisation of the land is wholly admirable. We recommend this little book to all our readers. It has nothing medical in it save that whatever concerns the *res publica* must deeply concern the medical profession, while we are certain that an acquaintance with the definitions of the nature of property and with the usual arguments as to its private and national ownership will be of value to medical men working at the political side of their calling, a number which has recently much increased.

Minimum Rates in the Chain-making Industry. By R. H. TAWNEY. London: G. Bell and Sons, Limited. 1914. Pp. 157. Price 1*s.* 6*d.* net.—This is the first volume of a series of books to be published under the Ratan Tata Charity Foundation in the University of London. It deals with the establishment of minimum rates in the chain-making industry under the Trade Board Act of 1909. The Ratan Tata Foundation was instituted in order to promote the study and further the knowledge of methods of preventing and relieving poverty and destitution. It conducts inquiries into wages and the cost of living, into methods of preventing and diminishing unemployment, and into measures affecting the health and well-being of workers and kindred matters. The results of its researches in connexion with the chain-making industry given in this small book are very interesting. From the experience categorised in the volume Mr. Tawney submits that the Chain Trade Board has proved that it is possible to fix and enforce minimum rates of

payment for a highly technical industry, and to do so with the approval of public opinion and of all the main classes of persons concerned in the trade. We must not make too large deductions from a very special set of instances, but the conclusion is a highly significant one. The monograph is well done and will decide many readers to purchase both it and its promised sequels, the first of which, on the feeding of school children, has already appeared.

MISCELLANEOUS VOLUMES.

OUR miscellaneous volumes this week are so miscellaneous as hardly to admit of any grouping.

Geology, apart from its scientific interest, has much to commend it as a means of recreation, inasmuch as it is for the most part an "open-air" science; and while its serious study is hardly to be thought of by the majority of busy medical men, still a desultory interest in it has advantages. An important division of geology is that of fossils. Those of the northern hemisphere are already well represented in many excellent text-books, but those of the southern hemisphere have perhaps not received in any one text-book the attention which they certainly deserve, the literature concerning them being widely scattered in various scientific publications, as is pointed out by Professor E. W. Skeats, of the Melbourne University, in an introduction to *Australasian Fossils: A Student's Manual of Palæontology*, by FREDERICK CHAPMAN, Palæontologist to the National Museum of Melbourne (Melbourne, Sydney, Adelaide, Brisbane, and London: George Robertson and Co. 1914. Pp. 341). This deficiency the author has now remedied. Part I. of the book deals with general principles, while in Part II. we have a systematic arrangement according to geological epochs of the fossils of Australasia in a series of chapters, each of which is followed by a list of the characteristic fossils described therein and a bibliography of the literature of the division dealt with. The many well-produced illustrations make the volume an admirable guide to the identification of specimens, while an appendix contains some useful notes on collecting and preserving fossils. A good index completes an excellent manual for students and others who desire a guide to the literature of the subject.

The Voluntary Service Committee and the National Service League are opposing teams in the "tug of war" in which our national defence is the rope. In the *Case for Voluntary Service* (London: P. S. King and Son. Pp. 200. Price 1*s.* net) the problem is first considered in its political and social aspect, and the needs and provision of our imperial military policy are considered. Then follows a comparison of voluntary and compulsory armies, a discussion on the Territorial Force and the particular problem of home defence. Various existing compulsory schemes are examined, the National Service League's army estimates are adversely criticised, and the conclusion is arrived at that compulsory service would entail a triple burden in the necessity for an increased, not a diminished, fleet, the compulsory home army, and a voluntary professional army for over-seas purposes.

Life in an Indian Outpost, by Major GORDON CASSERLY (London: T. Werner Laurie, Limited. 1914. Pp. 320. Price 12*s.* 6*d.* net), is a well-written and entertaining account of the life of a European officer in India, away from the sealed-pattern business of an ordinary plains station. The particular spot was Buxa Duar in the native state of Cooch Behar, whose enlightened ruler was a well-known figure in English society at home, as well as all over India. The duties, pleasures, work, and sport are described unaffectedly, and the reader gets a clear idea of the realities of Indian life. The book is well illustrated with photographs, apparently by the author.

There are, as is well known, at least two sides to every question. In the *Dictators of Mexico* (London: Effingham Wilson. 1914. Pp. 218. Price 2*s.* 6*d.* net) Mr. JOHN DE KAY gives us the views and experience of one who has been in close business relation with the rulers of Mexico for 15 years. Mr. de Kay goes to the root of the problems of Mexico. He gives a very fair, yet sympathetic, appreciation of the characters of both Diaz and Huerta—the last named of whom would appear to be by no means so black as he is painted. Here he is described as a plain, simple, rugged, and honest man possessing many virtues and some vices, severe and courageous, a stoic who daily takes his life in his hands. The so-called "Constitutionalists" are described as self-seekers and mere bandits. Mr. de Kay especially denies the stories told about Huerta's personal habits, and particularly gives the lie direct from personal knowledge—he spent the five months from September, 1913, to January, 1914, in close contact with Huerta—to the calumnies so widely disseminated concerning the latter's private house at Popotla. All interested in Mexico or in the present situation there should read this book; particularly it will confirm the opinion of our Ambassador in Mexico, a presumably competent judge, who, in justification of Great Britain's recognition of Huerta, described him as the only discernible man capable of restoring a more stable condition in that distressful land of vast opportunities and unfulfilled promises.

In THE LANCET of Dec. 23rd, 1911, p. 1779, we noticed two volumes by GLADYS DAVIDSON detailing the plots of 200 operas. The same author now offers us *Stories from Wagner's Operas* (London: T. Werner Laurie. Pp. 106. Price 1*s.* net), told at greater length than the brief summaries such as are included in the former volumes. The operas now told in story are the *Flying Dutchman*, *Tannhäuser*, *Lohengrin*, *Tristan and Isolde*, *Die Meistersinger*, *Der Ring der Niebelungen* (viz., *Das Rheingold*, *Die Walküre*, *Siegfried*, *Die Götterdämmerung*), and *Parsifal*.

Two reference handbooks call for notice. A useful one, both to the inhabitants of London and to visitors to the metropolis is the *Social Guide, 1914*, edited by Mrs. HUGH ADAMS and EDITH A. BROWNE (London: Adam and Charles Black. Pp. 264. Price 3*s.* 6*d.*). Preceded by a calendar of events is a comprehensive account arranged in alphabetical order of the various social amusements and entertainments in which society is interested, and, in addition, there has been included this year special information regarding various travel centres in all parts of the world. The mode of gaining admission to different functions and the dress appropriate to them are not overlooked.——*The Directory of Women Teachers and Other Women Connected with Higher and Secondary Education, 1914* (London: The Year Book Press, 31, Museum-street, W.C. Pp. 152. Price 7*s.* 6*d.* net), has increased in bulk owing to the large number of names which have been added to the directory this year. The second portion of the book is devoted to general information, commencing with a chronicle of the year and giving details with regard to appointments, degrees, educational societies and organisations, administration of secondary education, literature of the year regarding education, and so forth; while the third portion is occupied by a list of secondary schools for girls and university and training colleges. The utility of the book is marred by the fact that in the list of secondary schools fees and other useful particulars are omitted in many instances.

FIRE PREVENTION.—In this country the British Fire Prevention Committee have rendered useful service in many directions, and their work has been much appreciated by those who have charge of hospitals and other large institutions. It was on the initiative of this committee that the International Fire Service Council held its meetings at the end of June in London, when representatives of European and American fire brigades were present. The King sent the council His Majesty's good wishes. Earl Beauchamp, in welcoming the visitors on behalf of the Government, dwelt on the importance of the work done by the International Fire Service Council and by the British Fire Prevention Committee. Among the important questions discussed were celluloid dangers, petroleum dangers, fires on board ship, and the formation of county motor fire brigades. A meeting of the council will be held next year in Copenhagen, and in the meantime it has been decided to issue an International Fire Dictionary in three languages. This is a case where it seems to us an international language would serve a useful purpose in a fourth version, and Esperanto has already been used with success in ambulance exercises.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

COLLOTHIOL PREPARATIONS.

(AGENCY: F. H. MERTENS, 64, HOLBORN VIADUCT, LONDON, E.C.)

THESE interesting preparations of sulphur in a colloidal form are products of the Clin Laboratories in Paris. There is good reason for believing that sulphur in the colloidal form is considerably more active than sulphur in the ordinary form. The elixir collothiol is prescribed in diseases of the respiratory tract, particularly where there is secretory disturbance. It is also used in rheumatoid arthritis, while it is a useful antidote to lead poisoning since it readily converts lead compounds into the insoluble sulphide. Elixir collothiol is a pale yellowish fluid practically neutral in reaction. A drop of the elixir placed on a silver coin readily blackens it on warming. The elixir has a slightly saline taste. On evaporation ordinary sulphur separates and remains as a resinous mass. The elixir is clear but shows an immense number of mobile particles when examined with the ultramicroscope. Collothiol is also present in a pomade, an oily paste contained in a collapsible tube. It provides a powerful means for applying sulphur externally.

"VAPOROLE" NUCLEIN.

(MESSRS. BURROUGHS WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

The hypodermic injection of pure sterilised nuclein has attracted attention recently in connexion with its action in increasing the bodily resistance to bacterial invasion. It is recorded that these injections stimulate leucocyte formation and raise the opsonic index. The preparation has thus been employed in bacterial infections generally. The "vaporole" presents a convenient form for administering a definite quantity of the sterile solution of nuclein, the nuclein itself being derived from yeast cells. The preparation has also been reported on favourably in the treatment of alimentary toxæmia, in nervous prostration, and in disorders of nutrition.

POTATO EXTRACT PREPARATIONS.

(MESSRS. BAISS BROTHERS AND STEVENSON, LIMITED, 174, GRANGE-ROAD, BERMONDSEY, LONDON, S.E.)

The treatment of rheumatism, gout, lumbago, synovitis, and so forth, by potato juice was described in a paper in THE LANCET of April 11th, 1914, by Mr. Heaton C. Howard. Potato juice is now supplied in two pharmaceutical forms—namely, ext. solani liq. and ung. solani. The extract is a dark brown fluid smelling of aromatics and distinctly also of the potato. We found that it rapidly reduces alkaline copper solution and it also produces a beautiful silver mirror when heated with alkaline silver solution. It gives further a precipitate with calcium chloride when the mixture is heated, a part of which dissolves on allowing the fluid to cool. Potassium salts are present in considerable quantities, and probably in the form of citrates or tartrates, or both. Alkaloid reagents gave negative results. Iodine and bromine were without effect. The preparations are interesting and will no doubt receive further trial.

SEDOBROL.

(THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LIMITED, 7 AND 8, IDOL-LANE, LONDON, E.C.)

This combination presents sodium bromide in an appetising bouillon basis. Sedobrol consists of yellowish tablets which are practically completely soluble in warm water, but there is a separation of a distinct quantity of fat. The solution has the pleasant flavour of meat bouillon, but the bases are said to be of vegetable origin. We found that only a small precipitation occurred with bromine indicating the presence of a small quantity of nutrient, but on adding alkaline hypobromite there was marked effervescence of nitrogen gas due to nitrogenous bases. The presence and amount of bromine was confirmed, each tablet containing 17 grains of sodium bromide. In spite of there being only a trace of common salt present the flavour of the bouillon is pleasantly saline. The claims made in regard to sedobrol are: (1) that free dilution is ensured, which together with the presence of the stimulating vegetable extractives obviates gastric disturbances; (2) that by its medium bromide may be given in the form of a dietetic, the patient being unaware of the presence of the drug; and (3) that it enables the physician to give bromide while gradually withdrawing the daily intake of sodium chloride, which can be done without rendering the diet insipid. Clinical examples are given of the advantages of this means of administering bromides. Of course, it is highly desirable in the interest of the patient that sedobrol should be exclusively supplied by the physician and the treatment carried out under his observation.

PLASMON OAT FOOD.

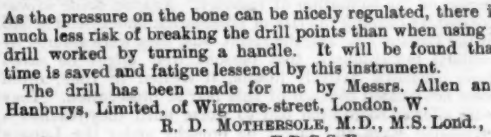
(INTERNATIONAL PLASMON, LIMITED, 66A, FARRINGDON-STREET, LONDON, E.C.)

On a previous occasion we reported upon plasmon rolled oats, but there has now been introduced a finely ground preparation known as plasmon oat food. The statement that there is added 10 per cent. of plasmon to the oat flour is confirmed by our analysis, since we found that the total protein amounted to 23·37 per cent., which is about double the quantity of protein found in ordinary oats. A distinct dietetic advantage is thus gained, chiefly of course in regard to the actual nourishing value of oatmeal.

New Inventions.

A NEW ARCHIMEDEAN DRILL.

I HAVE found the all-metal archimedean drill shown in the illustration much more satisfactory than other mechanical drills for making the screw-holes in plating fractures. The flanged wheel which drives the drill gives a comfortable grip for thumb and finger or hand, and can be held lightly without slipping when wearing rubber gloves.



As the pressure on the bone can be nicely regulated, there is much less risk of breaking the drill points than when using a drill worked by turning a handle. It will be found that time is saved and fatigue lessened by this instrument.

The drill has been made for me by Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W.

R. D. MOTHERSOLE, M.D., M.S. Lond., F.R.C.S. Eng.

Bolton.

AN X RAY SCREEN COMPRESSOR FOR THE DETECTION OF URINARY CALCULUS.

THIS is a small and extremely useful piece of X ray apparatus. It consists, as is shown in the illustration, of a short, blunt nozzle of lead glass, above which is fixed a piece of fluorescent screen. Between these is a small gap into which slides a cassete, or plate holder (half plate), containing an intensifying screen of tungstate of calcium. By means of two handles the operator can press the nozzle into the patient's abdomen and thus obtain an extremely bright view of a small area. He is able to explore renal and bladder regions, also to examine more closely supposed kinks and other intestinal conditions after the administration of bismuth. Any discovery he may make can be recorded by instantaneous exposure on the half plate which, in its casette, is placed in the opening below the screen while the exposure is made. Small calculi have been detected with this little instrument that would have evaded the more usual methods of X ray examination. In the last 310 cases of suspected urinary calculus examined by my colleague, Mr. H. M. Eccles, and myself at Guy's Hospital, 68 calculi were discovered, and in every case they were seen upon the screen prior to being photographed. This small screen compressor added materially to the successful detection of these stones.

Messrs. Harry Cox and Co., Limited, 47, Gray's Inn-road, W.C., have made the apparatus to my design.

EDWARD W. H. SHENTON, M.R.C.S. Eng., L.R.C.P. Lond.,
Harley-street, W. Senior Radiographer, Guy's Hospital, S.E.

MEDICO-LEGAL SOCIETY.

Discussion on Incipient Insanity.

AT the conclusion of the annual meeting of this society, held on June 30th at the rooms of the Medical Society of London, a discussion took place on Incipient Insanity, with particular reference to a Bill bearing upon this matter soon to be introduced into the House of Lords. The Bill has been drafted by the Medico-Legal Society, in consultation with the British Medical Association and the Medico-Psychological Association. It proposes to legalise the giving of medical treatment in the early stages of mental disease (subject to the consent of the patient), notwithstanding the provisions of Section 315 of the Lunacy Act, 1890, which make it illegal to exercise restraint over a person who is not a certified lunatic. The authority for treatment in an incipient case—which may be given in an approved house—for example, a mental hospital, general hospital, or private house or institution—is a declaration by a medical practitioner that the patient is suffering from incipient mental disease and is not suitable for certification as a lunatic or defective under the Mental Deficiency Act, 1913.

The PRESIDENT (Earl Russell) said the Bill was intended to deal with the circumstance that it was a very dangerous thing for a medical practitioner or anyone else to treat a person on the borderline of insanity. Anyone doing so was constantly running the risk of prosecution under Section 315 of the Lunacy Act, and the result was, they were assured by medical practitioners, that persons who might be saved from becoming actively insane, if treated in time, often were not treated because of this fear of prosecution. They were allowed to go from bad to worse until they reached a certifiable stage and might be brought under the Lunacy Act and properly treated. The Bill was a voluntary one; no person could be detained against his will. The Bill might be a better one if it were compulsory, but it would then have no chance of passing.

Dr. ROBERT ARMSTRONG-JONES, in opening the discussion, said that the whole object of the Bill was to avoid the stigma of certification. Mental disease was of all diseases the most curable in the early stages, but it was one of the most expensive and difficult to cure when rooted in any family. The Bill would make it possible for rich and poor to be treated outside the gates of an asylum; the potentially insane would be saved from the damning certificate. Dr. Armstrong-Jones mentioned that the Bill had the sympathy of the Board of Control under the Mental Deficiency Act.

Dr. FRED. J. SMITH said he wished to raise what was perhaps an academic point—Was there such a thing as incipient insanity? Was it not a condition which had been there practically from birth, though not exhibiting itself at first? He preferred the term used in the Bill, "mental disease of recent origin." For persons whose condition did not warrant compulsory detention the Bill would be an admirable one. The question arose whether a patient would realise his condition and submit himself voluntarily to treatment; such patients usually resented the idea that it was necessary they should be taken care of.

Dr. F. G. CROOKSHANK thought that without casting stones at the general practitioner there was a danger that under pressure the general practitioner would apply this Bill to persons who should be certified: that might be met by including in the declaration to be signed by the doctor the definite statement that the case was not suitable for certification. He foresaw difficulties because the declaration in effect authorised another practitioner to receive a patient and give treatment.

The PRESIDENT pointed out that the authority given by a medical practitioner was not necessarily to another practitioner, but to an approved person. It was felt desirable not to use the word "certificate," so that the patient could not be said to have been certified in any sense. The operation of the Bill would be under the direction of the Board of Control, whose inspectors would deal with cases which it was thought should be certified.

Mr. C. WOODWARD thought puerperal insanity a bad instance to choose for the purposes of the Bill, such persons were absolutely insane at the moment.

Dr. JAMES SCOTT (Holloway Prison) thought the Bill should deal with adolescent cases; in their case the stigma of insanity was a very real thing.

Dr. BERNARD H. SPILSBURY asked what would be gained by the Bill, seeing that it was already possible for a patient to give his consent to voluntary treatment. He thought refusals to undergo treatment would be frequent.

The PRESIDENT replied that the main object of the Bill was to avoid a prosecution of the medical practitioner under Section 315, but although the measure was a voluntary one there was no necessity for a formal consent to treatment. It was proposed to ask Lord Loreburn to introduce the Bill in the House of Lords, to explain its objects, and cause it to be read a first time. The Bill could not get any further this session, but it was thought useful to place it before the public.

Mr. ROLAND BURROWS, LL.D., in closing the discussion, said that care had been taken to eliminate from the Bill any term used in the Lunacy Act whose nomenclature had acquired a sinister meaning. The Bill declared, what was intended to be declared under the Lunacy Act, that if a person was not certifiable he could be treated. It was proposed that this should be done under proper conditions and without embarrassment to those in charge. The aspect of voluntary treatment had been over-emphasised in the Bill for the express purpose of allaying apprehension by the public. The Bill was based on a Government measure introduced in 1905, presumably with the approval of the Lunacy Commissioners. The Bill laid down no rule as to treatment; it merely provided that a person in whose custody a sufferer was should not be liable to be prosecuted. The form of treatment was a matter for a medical attendant. As to the definition of incipient insanity, he felt that the psychiatrists deserved criticism because they had not agreed amongst themselves what were the standards of sanity or insanity. The law had no regard to anything but objective symptoms.

THE LANCET.

LONDON: SATURDAY, JULY 4, 1914.

The Working of the National Insurance Act.

IN a recent article in the *Nineteenth Century and After*, advocating the establishment of a National Medical Service, Dr. W. A. BREND finds that the medical treatment available for the poor "neither covers the whole field nor is always of satisfactory quality." To obviate this and other defects Dr. BREND suggests the establishment of a salaried medical service, with local centres for medical treatment. In a town of, say, 20,000 inhabitants one centrally placed building would suffice for the assembling of patients for clinical purposes, the number of such buildings increasing proportionately to the population. This building, in his idea, would contain two or three consulting-rooms and waiting-rooms and a small theatre for minor operations. In larger clinics, or in the central one of a group, there should be in addition an X ray apparatus and a clinical pathological laboratory. The entire district should be divided into areas, and one salaried medical officer should be told off to do all the house visiting for each area, all consultation work being done at the clinic when the patient was in a position to attend. Each clinic, he considers, should command the services of from five to eight whole-time salaried general practitioners who should work in pairs by turns, at morning and evening hours, and should have the assistance of nurses as well as of specialists. There should be a chief medical officer to each clinic, with principal medical officers in all large towns and counties, and a central administrative staff. The officers of the clinical staff should be chosen persons, and ultimately a State diploma should be instituted. Dr. BREND cites the experience of the Great Western Railway at Swindon, where a scheme of something of this kind works well for 43,000 persons, and his views here are in accord with those of many who see no necessity for the institution of a State Medical Service. In small towns the cottage hospital and its staff might well develop into a clinical centre without any profound professional revolution. In larger towns coördination of the clinical centres with the hospitals might then be effected, and the latter institutions, relieved of trivial cases, would devote their energies, space, and funds to consulting and special work, and do so upon the existing voluntary system.

The advantages of a State Medical Service to the profession as a body should lie in greater leisure for keeping abreast of new knowledge, opportunity for post-graduate study and research work, regular hours and holidays, and certainty of income; but the drawbacks are as obvious as the advantages. Dr. BREND admits the danger that such a scheme might convert the practitioner into an official machine, and the time-honoured objection that it would preclude the public from the free choice of a doctor has to be got over. The amalgamation or coördination of all services at present having medical functions, culminating in the ultimate establishment of a Ministry of Health, is foreshadowed in all such suggestions for root and branch alteration of existing methods. We cordially agree with Sir CLIFFORD ALLBUTT in his advocacy, repeated this week to the Medical School of St. Thomas's Hospital, of a Ministry of Health, but this can be instituted without any deliberate transformation of medical men into a State Service. In considering the establishment of a State Medical Service as a panacea for the medico-economic ills of the public and the profession it may not be unfair to recall the fact that Dr. BREND was one of the optimistic supporters of the Insurance Act before it became law, as the columns of THE LANCET witness. But every one of the admitted defects of the Act, now brought to light as the result of experience of its working, was as a matter of fact insistently pointed out beforehand in these columns as probable. We refer to such defects, now confessed by everyone, as that the faulty conditions of club practice have reasserted themselves in panel work; that the bulk of the insurance work, instead of being evenly distributed, tends to fall into the hands of relatively few practitioners, so that many undertake more than they can adequately perform; that a cleavage has arisen in the profession between panel and non-panel doctors, tending towards the creation of rich men's and poor men's doctors; that the amount of sickness is suspiciously high in many places; that the pecuniary strain on hospitals has been increased; and that over-pressure has occurred among medical men.

We publish this week the last of a series of articles by our Special Commissioner, who has been giving a bird's-eye view of the working of the National Insurance Act during the early stages of its existence. The object of the articles has been to describe typical conditions in places geographically separated, as well as distinct in many of their main characteristics, some being large manufacturing towns, some country centres, some places where wages ruled high, some where poverty was a distinct feature, some where the feeling of the community was dead against legislation of the pattern to which the National Insurance Act belongs, and some where the Act was welcomed by many as an outward expression of their political creed. From the variety of experiences which our Commissioner has recorded there emerge certain definite lessons which do not in our opinion support the claim for the immediate institution of a State Medical Service, though they supply the reasons for what is, we think, an increasing

advocacy of this revolution among medical men. To begin with, it is perfectly clear that the working of the National Insurance Act, as far as the administration of medical benefit goes, is only partially satisfactory. A certain number of medical men have benefited pecuniarily by the new legislation and in many places the standard of contract practice has been improved, but in other places the old conditions of club practice seem to be persisting unchanged. But as the public, which is thus inadequately served, is not so ignorant as it used to be, considerable resentment may be expected. As yet the administration of the Act appears to be cumbersome and expensive, and we anticipate considerable modifications before smooth working is established, though we cannot call with the same conviction that Dr. BREND does for the institution of a State Medical Service. The scheme of a National Medical Service, before it can attain any enthusiastic support at the hands of the profession, demands more unbiased and less impulsive consideration than was accorded to the Insurance Act, which it is hardly likely to get under the ægis of any political sponsorship.

The Pituitary Body in Health and Disease.

THE evolution of our knowledge in regard to the functions of the various parts of the pituitary body, and the effects of their derangement in disease, affords one of the most interesting chapters in modern experimental medicine. This structure regarded for long as of little importance, if not actually vestigial in character, practically first received serious recognition from the acute observations of MARIE in 1886 in regard to acromegaly. Even after them, however, but little attention was paid to the possible activities of the pituitary body until the impetus given to the investigation of the ductless glands by the discovery of the internal secretions associated with some of them. Since the beginning of the present century a considerable literature, both on the experimental and clinico-pathological aspects of the pituitary functions, has arisen, and as a consequence our nosology has been increased by the differentiation of certain clearly defined diseases, and our therapeutics enriched by a valuable and powerful agent—pituitary extract.

The anatomy and histology of the gland have been studied with great care and with practical result. Clearly it consists of two portions, of different embryological origin, an anterior glandular lobe, derived from the pouch of Rathke, and a posterior or nervous lobe formed from a downgrowth of the neuroblast of the mid-brain. The glandular portion is divided into two—the pars anterior proper, which is by far the larger, and a smaller paler zone, called the pars intermedia, which forms an investment to the posterior lobe, from which it cannot be separated. It is also worthy of note that embryonic "rests" of hypophysial tissue are frequently to be found in the pharynx and base of the skull, which may possibly assist in carrying on the activities of the pituitary body, when it is diseased or injured in experiment. The complex relationship of the two parts of the gland to one another has rendered the actual differentiation of the special functions of each a matter of great difficulty, and even at the present time it can hardly be said to be complete. It appears to be definitely established that the anterior lobe is essential to life, since its complete removal results in death preceded by a train of symptoms to which the name of cachexia hypophysiopriva has been applied. Partial removal or disease of this structure results, according to CROWE, HARVEY CUSHING, and HOMANS, in a peculiar state of adiposity, with persistent infantilism in young animals or with retrogressive changes in the generative organs in adults. Conditions of polyuria, glycosuria, hypotrichosis, and œdema of the skin, with subnormal temperature and mental changes, are also common. Ablation experiments indicate that the posterior lobe is less essential to life, but show that it plays an important part in the utilisation of sugar in the organism, since after its removal a temporary lowering in the tolerance for sugars is followed by a lasting increase. The study of extracts of the gland, first started by SCHÄFER and OLIVER in 1895, has yielded the surprising result that it is from the posterior lobe, with its smaller and relatively simple and indifferent structure, that the active extracts are obtained. The separation of pituitrin and the discovery of its important effects in raising blood pressure, slowing the pulse, inducing diuresis, stimulating the mammary glands, and increasing uterine contractions are now matters of common knowledge and experience. It is generally supposed that the active substance is elaborated in the pars intermedia, and it is suggested by HERRING that it passes into the posterior lobe and thence into the ventricles of the brain. As in the case of the other glands with internal secretions, it would appear that disturbances of the functions of the pituitary body may lead to associated alterations in other secretory structures, and some authorities have endeavoured to establish polyglandular syndromes as a result. It is clear that the pituitary body and the testes and ovaries are intimately associated, and histological changes in the interstitial cells of Leydig in the testes have been demonstrated after partial hypophysectomy. There is a good deal of evidence that the thyroid gland and the pituitary act synergically, and that each may to some extent act vicariously for the other, as Dr. R. G. HOSKINS has rather happily expressed it.

The results of disease of the pituitary body are, as might have been anticipated from its complex structure and important functions, of varying and far-reaching character. At first, on the analogy of thyroid disease, it was customary to differentiate conditions of over-activity or hyperpituitarism and

those characterised by defective function or hypopituitarism. It soon became clear, however, that there were conditions which did not fall into either of these groups, owing to the fact that one part of the pituitary may be alone involved, or that by enlargement with over-activity it may interfere with the functions of the other part. For such conditions the term of dyspituitarism has been introduced. The matter is complicated, as has been so brilliantly demonstrated by HARVEY CUSHING and his co-workers, by what have been referred to as "neighbourhood symptoms"—that is, by the effects of increased intracranial pressure, and by the secondary effects upon other glandular structures. We publish in this week's issue of THE LANCET two interesting papers which illustrate the complexity and importance of pituitary disease and indicate that some of its forms may be less uncommon than is generally supposed. Dr. E. G. FEARNSIDES gives details of a dozen cases which have come under his notice, and the tables which are appended to his paper afford a valuable record of the varied symptoms which he has investigated in order to establish the diagnosis of pituitary disease. It will be seen from these that he has carefully examined the patients for those symptoms which might be expected to be present in derangements of the pituitary body in the light of our knowledge of its functions from physiological experiments. Consequently these tables are of considerable interest, although they are secondary to the main thesis of the paper, which is to establish the effects of pituitary disease upon the shape of the sella turcica and the diagnostic value of X ray examination of the base of the skull. Dr. FEARNSIDES concludes that in doubtful cases a change in the size or shape of the sella turcica, as seen in the X ray plate, is at present the most certain evidence of pituitary disorder, and for this purpose he states the actual measurements of the pituitary fossa as given by Professor ARTHUR KEITH, and the measurements in profile radiograms which may be regarded as abnormal according to Professor HARVEY CUSHING. The second paper is that by Dr. W. JOHNSON on a pathological investigation of four cases of pituitary tumour observed at Guy's Hospital. All four of these cases appear to have been cases of primary malignant disease of the pituitary body, and in only one was there any secondary growth. The growths presented peculiar and somewhat characteristic features, and were in most of the cases cystic. In one of them the ocular condition and the fields of vision were most carefully investigated by Mr. H. L. EASON, who has described the case fully in an interesting clinical lecture published in the *Guy's Hospital Gazette* of June 20th. There was complete temporal hemianopia, which occurs so frequently in pituitary tumours from the pressure of the growth upon the central part of the optic chiasma. Reproductions of the perimeter charts are given with Dr. JOHNSON'S paper.

It not infrequently happens that the detailed examination of a pathological condition by skilled observers throws light upon physiological conditions. The particular case of Dr. JOHNSON to which we have just referred affords an instance in illustration. The growth occupied the interpeduncular space completely and had broken through the optic chiasma in such a way that the right and left optic nerves appeared to be the direct continuations of their respective tracts—in other words, the fibres crossing at the chiasma were broken through. Fortunately, Mr. EASON'S observations were available to show that the temporal halves of the fields of vision corresponding to the nasal halves of the two retinæ were affected. Dr. JOHNSON availed himself of the opportunity offered of tracing the visual fibres backwards into the brain by studying the degenerations present. He found that the uncrossed fibres—that is, those that were not degenerated—occupied the outer and lower portions of the optic tract. This he confirmed by examination of one of the other cases. He also found that the degeneration was confined to the optic tract and ceased at the primary optic ganglia in the external geniculate body and the pulvinar. No degeneration could be discovered in the optic radiations or in fibres entering the calcarine cortex, thus negativing the statement that has been made that certain fibres pass directly to the occipital cortex without relays in the primary optic ganglia. We can commend both these papers to our readers as interesting, instructive, and suggestive.

The Dogs Protection Bill.

THE Bill to prohibit the vivisection of dogs has been recently made prominent. The cause of much bickering and manœuvring in committee, its deliberation has incidentally led to complications involving questions of Parliamentary procedure and practice, and on Tuesday last, the first occasion when a quorum of the Standing Committee on the measure met, the Bill was withdrawn. Considerations of sentiment and also of sentimentality played so large a part in this Bill that discussion of its purport is still desirable, although impossible without hurting the feelings of some who are interested. The Bill received a substantial amount of support in the House of Commons, though it was by but a small majority that it secured a second reading. There is no doubt that a great many members were prepared to vote for it, unless they could be shown sufficiently grave reasons for refraining. Up to a certain point the question is not one of hostility to physiological research as such, though naturally the opponents of research supported the Bill, if only as a base for future assaults; but we have had here an appeal mainly to that affection for the dog which is widely manifested by all sorts and conditions of men and women, and based on perfectly comprehensible feelings and reasons. But that these feelings can be pressed too far is demonstrated at once by considering, as Lord LAMINGTON

did in his presidential address this week to the Research Defence Society, the loss of our dog friends by distemper, a disease for which we may surely hope that scientific medicine, unfettered in its working, will soon find a remedy.

There is, admittedly, none of the domesticated animals which is capable of showing such devotion, such loyalty, to man as the dog; or which so uniformly receives in return so much human affection and companionship. Not to admit oneself a dog lover is almost to proclaim eccentricity, if not worse. But those whose bias would have led them to favour this Bill cannot be allowed to assume without protest that they alone entertain natural feelings. Physiologists and surgeons are just as fond of dogs as are any other members of the community. Some antivivisectionists, of course, have persuaded themselves that all who pursue physiological research are callous persons, who are insensible to feelings of compassion even if they do not gloat over cruelty for the mere sake of it; but this extraordinary misconception was surely not harboured by the majority of those who supported Sir FREDERICK BANBURY'S Bill in the division lobbies. To these, and all the many other reasonable people who are inclined to approve of a measure to exempt dogs from vivisection, it is surely sufficient to say that men of science do not practise vivisection with the object of causing or of witnessing suffering in any created thing. They seek the relief, not the infliction, of pain and suffering; and in pursuit of that aim they perform experiments only when they must, and only on those animals whose use appears most likely to advance knowledge and reveal truth. For the great majority of the experiments on living subjects, which are performed in this country, the dog would be an unsuitable subject, and the dog is therefore not used; but we cannot overlook the fact that our most distinguished physiologists, men whom the scientific world in all countries delights to honour, have said emphatically that for certain types of research the dog is indispensable. Even if it were not so at the moment, it would still be imprudent to lay down any absolute prohibition of the employment of dogs, for it cannot be foretold what the requirements of future research will be. No one, it may confidently be stated, would prefer to use a dog for the purposes of physiological experiment when another animal would do equally well. The alleged cheapness of stray dogs is one of the motives frequently imputed by the antivivisectionists to those who hold vivisection licences. This is nonsense. Stray dogs are not so cheap to buy as are some of the other animals commonly used by research workers; they are very much more expensive to feed, and they form but a minute fraction of the total number of animals annually subjected to vivisection. Rats, guinea-pigs, monkeys, horses, rabbits, and many other species are represented on the lists returned by those who hold vivisection licences. Some of these animals are much cheaper, some much dearer, than dogs. Economic considerations do undoubtedly enter to some slight extent into the choice of subject for physiological use—none of our laboratories are so wealthy as to be able to neglect so obvious a point; but economical considerations militate against, not towards, the vivisection of dogs, and certainly the guiding principle in the selection is the suitability of the animal in question for the particular purpose of the experiment. This principle makes the granting of discretion as to the animals to be used a necessity, but it does not preclude the erection of all needful safeguards.

There is, however, one comparatively unimportant branch of vivisection in which restriction, or at least limitation, is in our view reasonable. We refer to the vivisections performed before physiology classes as demonstrations of the truth of the statements of their teachers and their textbooks. It is true enough that all such experiments are performed under anæsthesia, and that the animals upon which they are performed are not allowed to regain consciousness but are killed as soon as the demonstration is completed. Nevertheless, the case in favour of these acts of vivisection is less impregnable than in respect of vivisection to promote new researches and to acquire new knowledge; and we could contemplate without any misgiving the entire abandonment of dogs as subjects for these demonstrations. Whether it is in the public interest that such a restriction as this should be enacted by Parliament, and in an absolute form, is a matter of opinion. But there can be, in our judgment, no question that the passage into law of the infinitely more sweeping provisions of Sir FREDERICK BANBURY'S Bill would have been an unfortunate thing. In this connexion it is satisfactory, in the event of the reintroduction of a similar measure, that the Home Office has intimated the need of allowing the use of dogs for vivisection in special circumstances. Here is a plain enough indication that the mischief of total prohibition is recognised in those quarters best qualified, next to the medical profession and students of physiology, to pronounce an opinion, but a Bill containing such a clause would still be both retrograde and unnecessary. The responsibility of the research worker towards the dog would possibly be emphasised; this no one could quarrel with. But to transfer the responsibility of deciding whether or not the dog would be the most suitable animal for any projected experiment from the professor of physiology to the permanent official would be a countervailing disadvantage so great as to justify again the opposition with which Sir FREDERICK BANBURY'S Bill met, an opposition which had the sympathy of the great majority of the medical profession.

Annotations.

"Ne quid nimis."

THE CHILDREN'S COUNTRY HOLIDAY MOVEMENT AND INFECTIOUS DISEASE.

FEW philanthropic undertakings have made more headway in recent years, or are more deserving of support, than those for the provision of country holidays for town children. Institutions such as the Children's Country Holiday Fund, the Pearson's Fresh Air Fund, and the Ragged School Union send every year many thousands of children into the country from London and from the larger provincial towns, while in addition there are large numbers of special organisations in working-class parishes for sending smaller parties to the sea or to quarters inland. Like all good things, the movement has its occasional drawbacks, one of which is that sometimes the influx of town children into country cottages and quarters is suspected to be the starting point of infectious disease, or to cause an unsatisfactory degree of overcrowding in rural areas where the housing provision for the indigenous population is already none too liberal. Such results, it is clear, can to a large extent be prevented by the selection of suitable districts and quarters and by inquiries as to the health of the children before they leave the town. In order to promote organisation for this purpose the Local Government Board has issued a circular to county councils and sanitary authorities indicating the way in which they may usefully coöperate with the organisations in question. The circular points out that effective preventive action rests primarily with the agencies concerned, and that it is no part of the duty of the medical officers of health in the country districts to undertake special supervision of the arrangements made for these children or to advise the agencies organising the holidays. It is believed, however, that if intended arrangements are communicated beforehand, the medical officer of health in the country will generally be prepared to assist the agency by preventing children being sent to houses where they would be exposed to risk of infection or to insanitary conditons, while he will find it an advantage, should infectious disease occur, to be in touch with the persons who are responsible for the care and maintenance of the children. The circular advises the agencies to make personal inquiries through voluntary workers at the children's homes before they are allowed to go for the holiday, and to invite the assistance of the town medical officer of health in ascertaining whether notified or other infectious diseases are present in the houses from which the children are sent away. Reference is also made to the aid which the town authorities can give to the agencies in securing that the children are sent away for their holidays in a cleanly state. The document, which can be obtained on application to the Board, should be useful by securing the concerted action which is desired, and indicating the extent to which coöperation may reasonably be asked for.

GUNSHOT WOUNDS OF THE SPLEEN.

Michelson, in the *Deutsches Archiv für Chirurgie* (Band cxx., H. 1–4), discusses both diagnosis and treatment of this comparatively rare accident. He has collected 80 cases from the literature, and refers also to his own experiences. It is rare that the spleen is alone damaged; this occurred in only seven cases, including one of the author's; most often the stomach or intestines are injured as well. When this is the case it is usual that the symptoms associated with these lesions mask those attributable to the spleen. On this account the diagnosis of splenic injury is frequently impossible. The site of the wound is often not a safe guide, for an instance is recorded in which the injury occurred in the fourth interspace and yet the spleen was found to be damaged. Sometimes there is little hæmorrhage in the early stages; internal hæmorrhage is inconstant. Perhaps the most constant sign of splenic injury is rigidity of the abdomen. When the blood accumulates along the posterior wall of the abdomen or behind the peritoneum, a very characteristic physical sign is a slowly developing rigidity of the upper abdomen. Treatment is operation and removal of the spleen. The operative mortality is high, 33·3 per cent., no doubt not so much due to the actual lesion as to the associated complications found. But where operation is not performed all the cases have been fatal. The author speaks strongly against the procedure of tamponade; splenectomy is the operation of election.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE conservator of the Museum of the Royal College of Surgeons, Professor A. Keith, has issued his annual report, and the show of specimens added during the past year is now on view, and will continue to be displayed until the end of the month. The anthropological collection has received many highly important additions, skulls of ancient Egyptians, of Stone-age inhabitants of England found in their flint mines at "Grime's Graves," near Weeting, Norfolk, of Anglo-Saxons, and also, and not the least significant, of modern English people. These show more clearly than is generally suspected how certain definite changes have occurred in the physical condition of the people in recent centuries. Dr. T. Wilson Parry has presented a set of preparations made by himself to show the implements and methods of trephining practised by people in a stage of stone culture.[1] Mr. Barrington Nash has presented a cast, undoubtedly authentic, of the skull of Robert Burns. A large number of preparations throwing light on the genitals in relation to changes in external sexual characters are preserved in the museum. During the past year a "mule" pheasant has been graciously presented by His Majesty the King, and in this instance the rudimentary genital glands, probably ovaries, have neither oviducts nor testicular ducts, and therefore the bird is regarded as asexual or neuter. Mr. E. T. Newton, F.R.S., has presented the first of his "reconstruction models," made up of plates of wax, enlarged from a corresponding series of microscopic sections, and put together so as to make one enlarged model of an embryo or organ. As usual, there are many additions to the pathological series. Mr. H. A. T. Fairbank presented to the Museum this year a preparation showing "Sprengel's shoulder," a congenital elevation of the scapula, bilateral, and occurring in a female infant who died from marasmus when six weeks old; and Dr. J. Kingston Barton has given to the collection some skiagrams showing an apparent disappearance of bone tissue

[1] THE LANCET, June 13th, 1914, p. 1699.

in the clavicle and a congenital hiatus in the upper part of the front wall of the thorax. Space prevents us from any mention of numerous other additions of high interest. The annual display and the conservator's instructive report well deserve the attention of the profession and of scientists. The exhibition runs a risk of being overlooked now that Fellows of the College mainly vote by papers, so that there is no longer a great concourse of visitors at the College on the day for the election of members of Council.

HYPOTHYROIDISM.

COMPLETE suppression of thyroid secretion produces the definite and well-recognised condition termed myxœdema, but partial suppression may also occur, and the effects are less definite, variable, and far from well recognised. To Dr. E. Hertoghe, of Antwerp, we are most indebted for their recognition. By patient observation extending over a period of 20 years he has shown that a variety of morbid states, the nature of which was not understood, are due to deficiency of thyroid secretion (hypothyroidism). Such deficiency is by no means uncommon and often is overlooked. In this country Dr. Leonard Williams has done much to call attention to it. Dr. Hertoghe has recently delivered a series of addresses in the United States on thyroid deficiency. In one, which is published in the Internal Secretions Number of *American Medicine*, he shows how widespread are the effects of thyroid secretion. He points out that no cell in the body can reach morphological perfection without thyroid stimulus. Hence the arrest of growth in cretins. Secondly, when a cell has done its work it disintegrates. If thyroid activity is below normal the carrying away of waste matter is incomplete, and mucin, fat, and other bodies accumulate, producing a certain form of œdema (myxœdema). Thirdly, he considers that the thyroid has a great influence over menstruation, pregnancy, and lactation; having an inhibitory action on menstruation, when it is subnormal the menstrual loss is increased. In pregnancy the thyroid is hypertrophied and pours into the blood an unusually large amount of secretion, thus, it is suggested, suspending menstruation. This action should be remembered, says Dr. Hertoghe, when repeated abortion resists ordinary treatment. After labour the increased thyroid secretion accelerates uterine involution and stimulates lactation. Dr. Hertoghe believes that hypothyroidism produces infiltration of every tissue, causing in muscles painful contractions, in nerves neuralgic and shooting pains, and in the central nervous system headache (migraine), dizziness, vertigo, and tinnitus, and in severe cases loss of consciousness, defective memory, and coma. To infiltration of glandular tissue Dr. Hertoghe traces serious and far-reaching symptoms: the sweat glands cease to act, intestinal secretions are dried up, hepatic activity is impaired, and canaliculi are compressed, causing a special kind of jaundice. Of effects on the skin he mentions premature falling and greyness of hair and striated and brittle nails. Loss of the outer third of the eyebrows he considers a striking sign. Eczema, psoriasis, seborrhœa, and alopecia find, he says, a favourable soil in the skin, and it is in these cases that thyroid extract gives good results. To infiltration of the bladder he attributes the formation of calculi or painful micturition. Bones, he says, become brittle, break easily, and are slow to unite. Hence thyroid extract is often useful in promoting the union of fractures. Cartilaginous tissues are also early affected. He describes as a pathognomonic symptom in the joints a crackling sensation like that produced by pressing on snow. Often the patient hears and feels crepitation of the cervical vertebræ. To infiltration of the cardiac muscle he traces a slow, weak pulse, and to infiltration of the nerve ganglia painful contractions with or without shooting pains in the left arm (false angina pectoris); to infiltration of respiratory mucous membrane dyspnœa, which in mild cases is intermittent and frequently mistaken for asthma. Hence the cases of asthma reported as cured by thyroid extract. In the gastro-intestinal tract the effects, he finds, are constipation and meteorism. He thinks that in time microbes migrate through the walls and reach the peritoneum and kidneys, and that the peritoneum in resisting invasion produces false membranes which grow into bands, causing kinks.

THE STREPTOBACILLUS PELLAGRÆ.

THE exhibition of a case of this disease at the recent meeting of the Dermatological Section of the Royal Society of Medicine recalls to our notice a paper on the streptobacillus pellagræ by Professor Guido Tizzoni, who occupies the chair of pathology at the University of Bologna.[1] The recent and more detailed researches among the rich material collected in pellagrous districts during the past year have enabled him to make known some new facts relative to the cultural characters and biological properties of the streptobacillus of pellagra which are of importance in establishing its more certain identification and in differentiating it more easily from the pathogenic and non-pathogenic micro-organisms which resemble it, and with which it might be mistaken on superficial examination. There are, according to Professor Tizzoni, two separate types of the streptobacillus, the streptococcal and the staphylococcal. The former is distinguished from the ordinary human streptococcus by the following characteristics: it passes through Carnot-Garnier tubes, which human and equine streptococci never do; in some phases of its evolution it presents distinctly bacillary forms; the lower limit of the temperature of development is higher than that of ordinary streptococci; it is not stained by Gram's method; it is distinctly hæmophile; it always coagulates milk within 24 hours, even after long preservation in a saprophytic state, while streptococci, both human and equine, coagulate milk only after one or more days; the colonies of the streptobacillus pellagræ in agar and gelatin differ from those of human streptococcus; and lastly, the cultures of the streptobacillus of pellagra sometimes undergo profound modification and pass from the streptococcal to the staphylococcal form. The second type, the staphylococcal, exhibits the following properties which distinguish it from the ordinary staphylococcus: it passes through Carnot-Garnier tubes, it develops in gelatin smaller and more granular colonies, it gives in fixation in gelatin rounder, larger, and more distinct colonies like those of the streptococcus, such cultures being paler in colour than the staphylococcus pyogenes, but acquiring the property of producing pigment after

[1] Malaria e Malattie dei Paesi Caldi. Anno V., Fasc. II. 1914. Rome, Via Farini, N. 62.

a saprophytic existence, the pigmentation being partial and never uniform as in the staphylococcus aureus and flavus; and lastly, when introduced under the skin or into the peritoneum of animals it never causes suppuration or fatal peritonitis. It appears, moreover, that there is no true transformation of one type into the other—i.e., a passing from the genus streptococcus to the genus micrococcus, but rather a simple transformation of a culture of a streptococcal type, by means of which, owing to a different grouping of the organisms, it assumes only from the microscopic point of view the appearance of the staphylococcus, retaining, however, in its colonies and gelatin cultures the fundamental characteristics of the streptococcus of origin.

THE VESALANIUM MISTAKEN FOR FRACTURE OF THE FIFTH METATARSAL BONE.

IN the *Boston Medical and Surgical Journal* of May 7th Dr. W. P. Coues has described a case of a very rare bony abnormality which is liable to be mistaken for fracture in X ray examinations. The vesalanium or bone of Vesalius of the foot is so rare that it is not mentioned in the standard modern works on anatomy of Sobotta, Piersol, Gerrish, Morris, Macalister, or Gray. It is described as follows by Professor Dwight in his "Clinical Atlas of the Variations of the Bones of the Hands and Feet": "The vesalanium, corresponding to the bone of the same name in the hand, is the proximal and external part of the tuberosity of the fifth metatarsal. It is excessively rare. I have never seen it in the macerated foot of an adult. Spronk has seen it at birth. I have once seen it in the skiagraph of a girl of 12. The entire base of the fifth metatarsal varies much in size. The vesalanium is usually more or less marked off by a groove on the plantar surface." The case reported by Dr. Coues is as follows. A healthy girl, aged 12 years, was seen at the Boston Dispensary. While running a week previously she slipped and fell, her ankle turning under her. After this she was lame and had considerable pain in the ankle. She was well developed and well nourished. Over the external lateral ligament of the ankle there was slight ecchymosis, and over the scaphoid bone tenderness. Movements of the ankle were free, but the child walked with a limp. A provisional diagnosis of sprain or fracture of the scaphoid bone was made, and the foot was immobilised in plaster-of-Paris. A skiagram showed what appeared to be the fracture of the base of the fifth metatarsal bone first described by Mr. Robert Jones in 1902. Its occurrence in childhood was thought most unusual. After two weeks the plaster was removed and another skiagram was taken which showed the supposed fragment in exactly the same condition as before, not united. There was distinct pain on pressure over the base of the fifth metatarsal, and it was supposed that the fragment was slow to unite. After another two weeks a skiagram showed the same condition. A skiagram was then taken of the opposite ankle which showed the same shell-like bone united to the base of the metatarsal by cartilage. All tenderness had disappeared in the left foot. The bandage was removed and weight-bearing on the foot was found possible. In consequence of the tenderness at the time of injury and afterwards an infraction of the cartilage uniting the vesalanium to the shaft could not be excluded. The importance of recognition of this rare abnormality is obvious. Dr. Coues suggests that some of the reported cases of fracture of the fifth metatarsal bone by inversion were examples of it, and others examples of fracture through the line of union to the metatarsal. A radiogram of the metatarsal bone on both sides should be taken in all cases in which fracture through the base of the fifth metatarsal bone has been diagnosed.

ARGYRISM FOLLOWING THE USE OF COLLARGOL.

CASES of chronic silver poisoning or argyrism are much less frequently seen than they used to be, in consequence of the disuse of silver as an internal remedy. In the *Journal of the American Medical Association* of May 2nd Dr. A. M. Crispin has pointed out that there is a danger that the prolonged use of the colloidal preparations of silver now in vogue, which are advertised as innocuous, may again familiarise us with argyrism. He reports the case of a young woman sent to him by her medical attendant with the request that she should be operated on for gall-bladder obstruction. Her complexion was of a dark bluish hue, with bright glistening eyes "compelling the wonder and admiration of all who beheld her." To the medical man it suggested a congenital heart lesion or intense cyanosis. This chromatic effect was a constant worry to an otherwise pretty girl. Sunlight seemed to increase the darkness of her colour. Examination of the chest revealed a perfectly normal heart and lungs. There were slight tenderness over McBurney's point and slight rigidity of the right rectus muscle. The most careful search failed to show any abnormality of hepatic function or anything to account for the blueness. On questioning she stated that she had taken collargol for four years under her medical attendant's advice, and had become "jaundiced." A blood count showed marked anæmia. Chronic appendicitis and argyrism were diagnosed. Before operating it was thought well to improve the patient's general condition and to try to clear her complexion. Potassium iodide had no effect on her colour. Acute coryza occurred, for which hexamethylenamine was given, and to Dr. Crispin's astonishment and the patient's joy her colour began to fade. She said that when she took her bath there was on the top of the water a supernatant film resembling oil, which she never observed before. Operation showed a chronically inflamed appendix, which was removed. The muscles and intestines had a bluish tinge. Dr. Crispin suggests that in a case of argyrism hexamethylenamine deserves a trial.

SECTION OF NERVE-ROOTS FOR BRACHIAL NEURALGIA.

DIVISION of the posterior nerve-roots has become a procedure of possible benefit in several conditions in which persistent pain constitutes the dominant symptom, and pain, too, which is often of so intractable and of so distressing a character as to justify what must be regarded as a serious operation. It has been practised, not only for the pain associated with the gastric crises of tabes dorsalis, with variable results, but also for erythromelalgia, again with some benefit in a few cases. For a case of persistent and acute brachial neuralgia this operation was done, and the report of the case is described by Sicard, Desmarsts, and Reilly in the *Revue de Neurologie* (1913, vol. xxvi., p. 107). The

patient was a man aged 48. His complaint was severe paroxysmal algesia of the right upper limb. It resisted all forms of treatment and made the patient's life unbearable. An operation was finally agreed upon. The posterior roots of the seventh and eighth cervical nerves and the first dorsal were divided; the operation was performed with relative ease. The immediate result was relief of the pain. There was in addition complete anæsthesia of the skin areas supplied by the divided nerves. The reflexes were almost abolished. Recurrence of pain, however, followed, and two months later a second operation was performed at which the fifth and sixth cervical and second dorsal nerves were divided. There was some difficulty on account of adhesions resulting from the previous operation. The final result, however, was permanent relief of the pain. Now it was noted that there was, as before, complete anæsthesia. The reflexes were abolished. Movements were affected to some extent. There was no definite loss of power, but rather some unsteadiness of action, some ataxia. This was more marked when the eyes were closed. The patient could, however, perform all ordinary movements with fair accuracy. There was some loss of tone of the muscles. It was of interest to note that there was no adiadokokinesia, an observation confirmatory of Babinski's views of the nature and origin of this curious sign. In so far as the result showed abolition of the pain, it can be said that the operation was successful and justifiable.

ON the occasion of the tercentenary of the foundation of the University of Groningen the degree of Doctor of Medicine *honoris causâ* has been conferred upon Sir Edward Schäfer and Professor J. N. Langley.

THE MILK AND DAIRIES BILL AND THE BACTERIOLOGICAL EXAMINATION OF MILK.

BY R. TANNER HEWLETT, M.D. LOND, F.R.C.P. LOND., D.P.H.,
PROFESSOR OF BACTERIOLOGY IN THE UNIVERSITY OF LONDON (KING'S COLLEGE).

THE Milk and Dairies Bill, 1914, contains one important alteration, or rather addition to its predecessors. In Clause 5, Section 2, it grants powers to health authorities to take samples of milk for "bacteriological examination." Now, judging by the Bill of 1912, Clause 2, Section 3, it is by no means improbable that to the framers of the Bill this bacteriological examination is intended to cover examination for B. tuberculosis only, either by microscopical or inoculation methods. In such a sense and so far the idea is good, and is rendered acceptable by the additional enactment that such samples shall be divided into three parts and the necessary check examinations made as may be desired.

Unfortunately, in Clause 15 the word "bacteriological" is not defined, and it is certain that by most health authorities it will be regarded in its widest sense, an assumption rendered all the more probable by amendments which have been moved in committee to add the words "or other" to "bacteriological." This addition would include the whole field of biological, enzymic, and physical tests, which are constantly brought forward as being infallible methods of judging of the purity of milk, and which, though constantly shown to be more or less fallacious for public health work, yet have such an attraction for the hygienic enthusiast that it is well-nigh impossible to shake his belief in their infallibility. There can be little doubt that the introduction even of a general quantitative bacteriological examination of milk will be fraught with great difficulties and much unnecessary disturbance to those engaged in the milk trade, and should there be added to this anything approaching a qualitative examination, then there is scope for any quantity of misguided energy.

It appears to be forgotten by those who advocate this sort of control that no country has adopted it for legal purposes except in the case of certain special milks which are sold under certain fixed conditions and for which a special price is paid.

Quantitative Enumeration of Bacteria in Milk.

But there are some considerations which must be carefully weighed by those who advocate a simple quantitative enumeration of the bacteria present in a sample of milk as a criterion of its cleanliness and age, and which, if rightly apprehended, show that such a simple enumeration, while direct in its answer as to numbers, gives no reply as to the means by which such numbers are attained. Briefly these are some of the considerations:—

I. We have no reliable data as to what the bacteriological content of milk should be when milk is delivered to the public after such reasonably proper handling as is possible in commercial work. Figures purporting to give such information there are undoubtedly, but the conditions under which these were obtained are not the conditions of practice. How often milk is obtained from a cow direct, and simply kept in a vessel of some kind and examined after 24 or 48 hours at certain fixed temperatures, and the consequent multiplication ascertained. Now any butter-maker knows that if he wants his "starters" to sour more rapidly he must stir them well at intervals, and in ordinary practice milk from the time it leaves the cow till it gets to the consumer is in constant motion, which without doubt produces a profound effect on bacteriological multiplication. Again, the process of straining, especially when centrifugal cleaners are used, and also of cooling, all tend to increase the apparent number of effective organisms by breaking up colonies and rendering active organisms which by enclosure in such colonies had ceased to be available. The following experiment will show the effect of a centrifugal cleaner, which while actually removing many organisms (as could be seen by the qualitative character of the experiments) apparently increases the bacterial count. Six churns of milk were mixed and passed through a centrifugal cleaner running at about 600 revolutions per minute; before passing, 3,900,000 organisms per c.c.; after passing, 5,400,000 organisms per c.c. Also the effect of agitation becomes the more marked as the bacteriological content increases, and it is just at the time when multiplication has already taken place—namely, after arrival at the distributor's premises—that it undergoes the most drastic agitation, and the rate of increase is accelerated out of all due proportion.

II. Any value which might attach to a quantitative examination is completely lost if at any stage the milk be subjected to pasteurisation. It is quite possible to pasteurise milk in such a manner that there is no outward indication that

this has been done, and yet the bacterial content be brought within any desired limits, and there would also be no indication as to how often this might have been practised. This is probably one of the most potent objections to bacteriological standards on account of the false idea of freshness which they may imply. This is not the place to enter into the question of the merits or demerits of pasteurisation, but, at any rate, it does not make for improvement in the milk-supply.

Bacterial Development in Milk in Ice-rooms and Ice-boxes.

III. With the effect of weather vagaries, of actual climatic conditions, as opposed to temperature, and of the awkward concurrence of an impoverished and tepid water-supply on farms at times when prolonged or excessive heat renders a plentiful and cold supply for cooling most necessary, there is not space here to deal, but the effect of holding milk in ice-rooms on bacterial development touches this question of bacteriological examination very closely.

It must be clearly understood that since (at least in the case of London) milk reaches the distributor each day during the hours of 12 midnight and 4 A.M., and again from 11 A.M. to 4 P.M., and that the usual times of delivery of milk to the consumer are from 5 A.M. to 7 A.M., and from 12 midday to 3 P.M., nearly half the day's supply arrives at a distributing station after the last round (12 midday) has been dispatched. The milk so arriving must be held for the next morning's delivery. This necessitates some hours' storage in ice-rooms, and for practical purposes a temperature of 45° F. is generally attained. It might be supposed that at this temperature multiplication would be so slow as to be almost negligible, but the results of a few experiments show that this is not the case, and the higher the initial count on going into the ice-room, the greater will be the development during storage. 1. A churn of milk chilled to 45° F. on the cooler contained 483,000 bacteria per c.c. The same kept 18 hours in the ice-room at 43°–45° F. then contained 970,000 per c.c. 2. The following results were obtained with churns of milk taken after passing a centrifugal cleaner, these being then kept in the ice-room at 45° F. for 18 hours.

(*a*)	Before storage	4,000,000	bacteria per c.c.
	After ,, ...	12,320,000	,, ,,
(*b*)	Before storage	2,000,000	,, ,,
	After ,, ...	8,100,000	,, ,,
(*c*)	Before storage	3,000,000	,, ,,
	After ,, ...	10,300,000	,, ,,
(*d*)	Before storage	2,220,000	,, ,,
	After ,, ...	5,120,000	,, ,,
(*e*)	Before storage	3,780,000	,, ,,
	After ,, ...	5,550,000	,, ,,

3. Small samples of milk (50 c.c.) kept under similar conditions.

(*a*)	Before storage	1,580,000	bacteria per c.c.
	After ,, ...	7,500,000	,, ,,
(*b*)	Before storage	1,940,000	,, ,,
	After ,, ...	8,500,000	,, ,,

These all have a very direct bearing on the results of taking samples of milk and placing them in ice-boxes and sending them to laboratories for examination. The temperature of an ordinary good ice-box is by no means steady, as the following readings will show:—

Time.	Temperature. Inside.	Outside.
10 A.M.	37·5° F. ...	65° F.
1 P.M.	39·2° ...	67°
6 P.M.	41·0° ...	68°
10 A.M. (next morning) ...	59 0° ...	65°

If small samples kept constant at 43°–45° F. show the increase stated above, what will it be when the conditions are those of the ice-box, and yet when samples are divided into three it is impossible that all will be kept under identical conditions or be examined at the same interval of time. What a fruitful source of discrepancy and unjust deduction is here!

The following is an actual experiment made under such conditions. Two samples of milk were taken and placed for one hour in an ordinary good type of ice-box, such as is used for sending samples for bacteriological examination by rail or post, the copper receptacle being well packed with ice. A quantitative examination was then made in each case and the bottles returned to the box and kept in it for 24 hours and again examined. The temperature of the milks was then 60° F., with an outside temperature of 64°. The results were as follows:—

	Start.	24 hours later.
Sample 1	168,000	550,000
Sample 2	10,800,000	36,500,000

These samples were deliberately chosen to have a high and a low initial count respectively, and in each case show a very marked increase during an interval which would be a normal one if samples were dispatched by rail to bacteriological laboratories, as would be the case in most instances.

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office in Soho-square on June 26th, Sir Henry Morris, the treasurer of the College, being in the chair. He was supported by a very large number of governors, amongst whom were: Mr. S. Boyd, Sir John F. H. Broadbent, Mr. J. Paul Bush, Dr. F. Charlesworth, Sir William S. Church, Sir Thomas Boor Crosby, Sir Dyce Duckworth, Mr. A. P. Eldred, Dr. L. Grant, Dr. W. S. A. Griffith, Dr. F. de Havilland Hall, Mr. H. E. Haynes, Mr. H. Hilliard, Mr. D. Keele, Mr. J. B. Lawford, Mr. J. H. Morgan, Mr. W. A. Propert, Dr. G. Rankin, Sir James Reid, Dr. St. Clair B. Shadwell, Colonel Bruce M. Skinner, A.M.S., Dr. S. Sunderland, Dr. F. Taylor, Dr. W. E. Wynter, and Mr. E. P. Young.

The SECRETARY read the report of the scrutineers as to the successful candidates for pensionerships and foundation scholarships as follows:—

PENSIONERSHIPS.	Votes.
Nunn, Alice S.	5418
White, Marianna W.	4879
FOUNDATION SCHOLARSHIPS.	
Dyson, Malcolm H. C.	7576
Morgan, Algernon W.	7250
MacDowell, Thomas W.	3896

The SECRETARY reported that as vacancies had arisen since the voting papers were printed, Emma M. Daniell would be elected a "Pugh" pensioner and William G. Hughes would be elected a foundation scholar at the Council meeting which would be held immediately after the annual general meeting.

The annual report of the Council to the governors stated that the foundation had suffered during the years 1912 and 1913 by the uncertainty which had overshadowed medical practice throughout the country, many medical men having withdrawn their contributions. The Council urged upon all friends of the College to do their best to secure fresh annual subscriptions in order that the work hitherto carried out by the Royal Medical Foundation might be maintained. This comprised the provision of 50 pensionerships of £30 a year for members, or widows of members, of the medical profession in reduced circumstances, and of 50 foundation scholarships, by means of which board, clothing and pocket money, and an education of the highest class are given

gratuitously to necessitous sons of medical men. The report further impressed upon those intending to leave money for the Foundation of Epsom College the great importance of mentioning in their wills the official title of the College—namely, "Epsom College"—as a legacy of £500 which the Council thought was certainly intended for the College, had recently been lost as a result of what was, if the Council were right, a clerical inaccuracy in the descriptive title of the College. The work of the College, the general health of the boys, and the school discipline had, as usual, been quite satisfactory. The various school games—cricket, football, and hockey—had been played with success, the football team having won most of its matches; the Officers' Training Corps was in a flourishing condition; an aero section and workshop had been instituted; and the various school institutions had been very successfully carried on. Since the last annual general meeting G. W. Davis had obtained an open scholarship in science at St. Mary's Hospital; L. V. Ardagh had secured an exhibition for classics at Wadham College, Oxford; A. R. Wood had won an exhibition for science at Clare College, Cambridge; and two old Epsomians had gained open scholarships at St. Bartholomew's Hospital in October last—namely, G. K. Bowes in science, and J. W. S. Dick in arts.

In proposing that the report be adopted Sir HENRY MORRIS referred to the suggestion which had been made by some persons that the Royal Medical Benevolent Fund and Epsom College ought to have compromised in regard to the bequest left by the late Miss Glenny. He said that it would have been most unjustifiable for the College to agree to such a proposal, as the Council was convinced that the testatrix intended the bequest for Epsom College, and their opinion was fortified by the statement in the proof of Mr. Crosse, the solicitor to the testatrix and one of the executors, that the executors were satisfied that Epsom College was entitled to the legacy, that being the institution the testatrix intended to benefit. Furthermore, the executors would have been failing in their duty had they not done their very best to enable the bequest to reach the destination intended by the testatrix. The chairman emphasised the point that an interval of four days had elapsed between the occasion on which Mr. Justice Joyce stated that if either side knew, either by inadmissible evidence or otherwise, that the legacy was intended for the other, the legacy ought not to be contested, and the day on which judgment was given in favour of the Royal Medical Benevolent Fund.

Mr. PARKER YOUNG explained the reasons which had actuated the committee of the Royal Medical Benevolent Fund in the course they adopted, and expressed the hope that there would be no future difficulties between the two medical charities.

Formal business having been transacted, a vote of thanks to the chairman, moved by Sir WILLIAM CHURCH and seconded by Sir THOMAS BOOR CROSBY, brought the proceedings to a close.

ROYAL COMMISSION ON VENEREAL DISEASES.

AT the forty-third meeting of the Royal Commission on Venereal Diseases evidence was given by Dr. J. J. Pringle, physician in charge of the skin department of Middlesex Hospital and President of the Dermatological Section of the Royal Society of Medicine.

Dr. Pringle stated that of 36,151 cases of skin disease dealt with in the out-patients' department of the Middlesex Hospital during the last 25 years, 1853, or rather over 5 per cent., presented indubitable evidence of syphilis. This figure did not represent the number of patients who had attended the hospital for syphilitic manifestations, but only those who had been referred to the special department as suffering from some affection of the skin. Of the 1853 cases of syphilis 925 were males and 928 females. Dr. Pringle thought that this apparent equality of incidence in the two sexes was due to the fact that men do not willingly attend hospitals during working hours, except for diseases which in their opinion threaten life or cause grave discomfort or pain. On the other hand, anything causing disfigurement impelled women to seek medical advice. Of the 1853 cases of syphilis already mentioned nearly 24 per cent. were foreigners.

Dr. Pringle stated that he could not see his way to supporting or advocating any measure of compulsory notification of venereal diseases. The medical profession was, he thought, practically unanimously opposed to it, and even if made confidential its effects upon the public would be merely to drive them to seek treatment from unqualified persons. His experience both in hospital and private practice convinced him that much of the syphilis existent in England was of foreign importation. He believed that a considerable number of prostitutes left their own countries because they were unable to ply their trade there, and spread the disease in this country. It was important that this matter should be further investigated and that steps should be taken to deal with it.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Metropolitan Borough of Stoke Newington.—In London sanitary and social progress is greatly affected by the increasing "tenementation" (if the word may be allowed) of houses originally built and contrived for single families, and Professor H. R. Kenwood's report on Stoke Newington for 1913 brings out very clearly the drawbacks to such a tenement house in working-class neighbourhoods. The proper washing and drying of body clothing, bedding, and household linen is always difficult in these circumstances, and in many cases it is impossible. The one copper in the basement or on the ground floor has to be approached through someone else's kitchen or scullery; there are few if any conveniences in the shape of mangles, washing boards, and the like, and the drying has to be done in a small room which must often serve as a living room, and which is crowded at times throughout the day. A tenement house lacks adequate space for healthy reasonable comfort or for children to play, has no provision for storing food or proper facilities for washing up, and no place for storing coal or wood. Little advantage can be expected from school education in "hygiene," or from visits of sanitary inspectors and health visitors, while the means of carrying out elementary requirements of cleanliness are absent. The local authorities in London are able to enforce the provision of a water-supply on each floor of a tenement house, but this is often met merely by the provision of a tap on the landing, and all dirty water has to be carried down one or more flights of stairs. It ought, in Professor Kenwood's view, to be possible to demand that a scullery sink should be provided on each floor. Where the total number of lodgers in a tenement house exceeds 12 the landlord is required to provide a second water-closet, but almost invariably this is placed alongside the other water-closet in the backyard. It should be on the first floor, where it could also serve if necessary as a slop sink. Provision should be required for the proper storage of food in respect of each tenement, against an external wall, and properly lighted and ventilated. Professor Kenwood also lays stress on the defective principle on which the laws relating to these houses are based. The landlord should be required to maintain his property in a sanitary state under a penalty, whereas at present "he has no obligation to do anything until insanitary conditions are belatedly discovered by the sanitary inspector and a notice is served upon him." Professor Kenwood is evidently of opinion that Section 15 of the Housing and Town Planning Act, 1909, of which much was expected, is inadequate for this purpose. Realising that the insanitary tenant is often by no means free from blame on his own account, the report advocates additional powers in by-laws relating to tenement houses by which the tenants themselves are made more responsible for cleanliness and the proper maintenance of sanitary provisions. It is difficult to read this report, which is confirmed by that of many other medical officers in recent years, without surprise that these matters have not already been more seriously taken in hand in London. The matter of tenement houses is one on which the Local Government Board and the London County Council might be expected to have a settled policy, in the active pursuit of which any necessary additional legislation should be strongly pressed for. Possibly the solution lies in the annual licensing of all such houses. Professor Kenwood reports what appears to be an exemplary penalty for milk adulteration in Stoke Newington. The defendant, who had several previous

convictions against him, was proceeded against for selling milk containing 8 per cent. of added water, and was fined £100, with costs, with the alternative of three months' imprisonment.

Guildford Rural District.—Dr. R. W. C. Pierce refers to an investigation made by Dr. E. P. Manby for the Local Government Board, which showed that a shortage of working-class dwellings existed throughout the district, and particularly in five parishes. This confirmed the opinion which the medical officer of health had frequently expressed, but from which the district council dissented. It seems to be argued that no action need be taken by the local authority, as many of the cottages are occupied by persons working in other districts. This fact, however, hardly lessens the responsibility of the district council to use the Housing Acts for the purpose of providing cottages where there is a clear demand for them by persons working in their district, and it may be supposed that the council would have full control over the tenancies of any working-class houses which they provided under the Housing Acts. Dr. Pierce states that the four cheap cottages erected at Merrow by Mr. St. Loe Strachey could have been let over and over again. He doubts, however, if the solution of the rural housing problem can be found in attempting to build a £100 cottage, which really means the reduction of the cost of materials and construction to the lowest limits of habitability. The Merrow cottages are characterised in nearly all details by cheapness of materials and omission of many items usually considered necessary from the points of view of sanitation and convenience. A particular defect in such cheap cottages is the lack of cubic space; even old and otherwise insanitary country cottages frequently have a roominess which is absent from the modern cottage, in the construction of which the low common lodging-house standard of 300 cubic feet per person is too readily accepted. Good and substantial cottages, even when built in numbers by contract, cannot be erected in this part of Surrey under from £175 to £200 each. Dr. Pierce asks why the rural worker should be required to put up with a cheap and unsatisfactory cottage, and remarks that this country is not so impoverished that it is obliged to provide for its rural population by makeshift methods. In regard to the treatment of tuberculosis in non-insured persons (excluding dependents of the insured) a scale of costs was arranged last year between the district council and the county council of Surrey. The latter are to pay one-quarter of the total cost and the Treasury one-quarter. The other half is to be made up from the funds of the rural district council and from the Treasury grant in equal amounts, after deduction of any sums received from the patient. In 1913 tuberculosis work by the county council appears to have been limited to domiciliary visiting of insured patients by the county tuberculosis officer. A dispensary is now to be established in Guildford, and progress will be made with the institutional treatment of both insured and non-insured persons. The report refers to the working of the tuberculosis Order of 1913 in regard to tuberculous cattle; experience so far has shown that the veterinary examination of cows in the manner prescribed by the Order cannot take the place of systematic veterinary inspection of all the milking cows of the district, which is needed if the tuberculous cows are to be identified. It is noteworthy that out of five cows suspected to have tuberculous udders, on veterinary examination under the Order, four did not yield milk in which tubercle bacilli were found on centrifugalising.

Auckland Rural District.—This report, like the two above referred to, contains instructive information on housing questions. The Durham colliery village, as is well known, often consists of large numbers of houses built in rows, which do not allow of through ventilation, and have upper rooms the height and lighting of which are altogether inadequate. The houses have no yards or spaces belonging to the dwelling, but abut on unpaved common yards or back streets the chief feature of which is the line of capacious middens in between the rows of houses. It is evident from Dr. John F. Macdonald's report that the council of the Auckland rural district are making considerable progress under the Housing Acts in improving such villages, and that inspection is proceeding fairly rapidly. Plans are given in the report to illustrate clearances which have been made, and photographs show the great improvement which has resulted either by requiring closing, demolition, and rebuilding, or by getting the roofs of the houses raised and substantial large bedroom windows provided in place of the small apertures which formerly served as window spaces in the upper rooms. The work has been largely undertaken by different colliery owners as a result of the representations of the local authority and its public health officers. Self-contained yards have been added in some cases, and insanitary privy middens have been removed. Over 100 new houses were erected and occupied during 1913. Out of 397 cases of scarlet fever notified during the year 233 were removed to hospital. Dr. Macdonald gives a table to show the occurrence of secondary cases in households infected by scarlet fever (*a*) when the primary case was taken to hospital and (*b*) when the primary case was treated at home. While as many as 14 households were affected by return cases after the primary case had been sent home from the hospital, about four times as many secondary cases occurred when no hospital treatment was given to the primary case. In preparing this table Dr. Macdonald has in each instance reckoned the proportion of attacks on susceptible children under the age of 14.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 9192 births and 4193 deaths were registered during the week ended Saturday, June 27th. The annual rate of mortality in these towns, which had been 13·2, 13·5, and 12·9 per 1000 in the three preceding weeks, further fell to 12·1 per 1000 in the week under notice. During the first twelve weeks of the current quarter the mean annual death-rate in these towns averaged 13·9, against 13·1 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 4·9 in Swindon, 5·5 in Bournemouth, 5·6 in Southend-on-Sea, 6·1 in Hastings, 6·3 in Croydon, and 6·6 in Walthamstow, to 17·3 in Liverpool and in Middlesbrough, 18·3 in Oldham, 18·4 in Smethwick, 19·8 in Wakefield, and 21·1 in Stockton-on-Tees.

The 4193 deaths from all causes were 304 fewer than the number in the previous week, and included 394 which were referred to the principal epidemic diseases, against 395 and 390 in the two previous weeks. Of these 394 deaths, 144 resulted from measles, 93 from whooping-cough, 79 from infantile diarrhœal diseases, 35 from diphtheria, 30 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·1 per 1000 and coincided with the rate in the previous week. The deaths attributed to measles, which had been 131, 119, and 140 in the three preceding weeks, rose to 144 last week, and caused the highest annual death-rates of 1·8 per 1000 in Stockton-on-Tees, 1·9 in Dewsbury, 2·0 in Smethwick, 2·1 in Warrington, 2·5 in York, and 2·8 in Oldham. The deaths referred to whooping-cough, which had been 117, 111, and 99 in the three preceding weeks, fell to 93 last week; the highest death-rates from this disease were 1·6 in Middlesbrough, 1·9 in Gillingham, 2·1 in Warrington, and 2·4 in Barrow-in-Furness. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 80, 69, and 79 in the three preceding weeks, were again 79 last week, and included 15 in London, 8 in Liverpool, 7 in Birmingham, and 3 each in Smethwick and Manchester. The deaths attributed to diphtheria, which had been 38, 56, and 40 in the three preceding weeks, fell to 35 last week, of which 11 occurred in London, 4 in Birmingham, and 2 each in Edmonton, West Ham, and Bradford. The deaths referred to scarlet fever, which had been 26, 24, and 24 in the three preceding weeks, rose to 30 last week, and included 6 in London and 3 in Liverpool. The fatal cases of enteric fever, which had been 9, 16, and 8 in the three preceding weeks, rose to 13 last week, and included 2 in London and 2 in Liverpool.

The number of scarlet fever patients under treatment in the London Fever and the Metropolitan Asylums Hospitals, which had steadily increased from 2862 to 3038 in the six preceding weeks, further rose to 3088 on Saturday last; 440 new cases were admitted during the week, against 339, 391, and 405 in the three preceding weeks. These hospitals also contained on Saturday last 1100 cases of diphtheria, 304 of whooping-cough, 72 of measles, and 35 of enteric fever, but not one of small-pox. The 1045 deaths from all causes in London were 8 fewer than the number in the previous week, and corresponded to an annual death-rate of 12·1 per 1000. The deaths referred to diseases of the respiratory system, which had been 179, 143,

and 163 in the three preceding weeks, fell to 144 in the week under notice, and were 17 above the number recorded in the corresponding week of last year.

Of the 4193 deaths from all causes in the 97 towns, 176 resulted from different forms of violence and 377 were the subject of coroners' inquests. The causes of 29, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Manchester, Salford, Bradford, Leeds, Sheffield, Newcastle-on-Tyne, and in 73 other smaller towns. Of the 29 uncertified causes of death, 6 were registered in Liverpool, 4 each in Stoke-on-Trent and in Birmingham, 3 in St. Helens, and 2 in Hull.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1276 births and 641 deaths were registered during the week ended Saturday, June 20th. The annual rate of mortality in these towns, which had been 15·6, 16·0, and 14·4 per 1000 in the three preceding weeks, rose to 14·6 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these towns averaged 15·7, against a corresponding rate of 14·0 per 1000 in the 97 large English towns. Among the several towns the death-rate in the week under notice ranged from 8·8 in Kilmarnock, 10·1 in Motherwell, and 10·5 in Clydebank, to 18·3 in Leith, 18·7 in Greenock, and 18·9 in Hamilton.

The 641 deaths from all causes were 10 in excess of the number in the previous week, and included 67 which were referred to the principal epidemic diseases, against 62 and 48 in the two preceding weeks. Of these 67 deaths, 20 resulted from whooping-cough, 20 from infantile diarrhœal diseases, 17 from measles, 6 from diphtheria, and 4 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·5, against 1·1 per 1000, in the 97 large English towns. The deaths attributed to whooping-cough, which had been 23, 19, and 15 in the three preceding weeks, rose to 20 in the week under notice, of which 16 occurred in Glasgow and 2 in Greenock. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 7, 16, and 10 in the three preceding weeks, rose to 20, and included 9 in Glasgow, 4 in Dundee, 2 in Aberdeen, and 2 in Hamilton. The fatal cases of measles, which had been 17, 19, and 12 in the three preceding weeks, rose to 17 in the week under notice, of which 8 were registered in Glasgow, 3 in Dundee, 3 in Hamilton, and 2 in Clydebank. The 6 deaths attributed to diphtheria, of which 2 occurred in Aberdeen and 2 in Motherwell, were slightly in excess of the average in the ten preceding weeks of the current quarter. The deaths referred to scarlet fever, which had been 5, 3, and 7 in the three preceding weeks, fell to 4 in the week under review, and comprised 3 in Glasgow and 1 in Kilmarnock.

The deaths referred to diseases of the respiratory system, which had been 96, 99, and 95 in the three preceding weeks, further declined to 77 in the week under notice; and 24 deaths resulted from various forms of violence, against 22 and 24 in the two preceding weeks.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1301 births and 605 deaths were registered during the week ended Saturday, June 27th. The annual rate of mortality in these towns, which had been 16·0, 14·4, and 14·6 per 1000 in the three preceding weeks, fell to 13·8 per 1000 in the week under notice. During the first 12 weeks of the current quarter the mean annual death-rate in these towns averaged 15·6, against a corresponding rate of 13·9 per 1000 in the 97 large English towns. Among the several towns the death-rates last week ranged from 10·5 in Clydebank, 11·0 in Falkirk, and 11·3 in Motherwell, to 18·0 in Aberdeen, 19·0 in Kirkcaldy, and 23·0 in Perth.

The 605 deaths from all causes were 36 fewer than the number in the previous week, and included 52 which were referred to the principal epidemic diseases, against 48 and 67 in the two preceding weeks. Of these 52 deaths, 18 resulted from whooping-cough, 10 from infantile diarrhœal diseases, 8 from diphtheria, 7 from measles, 7 from scarlet fever, and 2 from enteric fever. The mean annual death-rate from these diseases was equal to 1·2 per 1000, being 0·1 above the rate recorded in the 97 large English towns. The deaths attributed to whooping-cough, which had been 19, 15, and 20 in the three preceding weeks, fell to 18 last week, and included 15 in Glasgow. The deaths from infantile diarrhœal diseases, which had been 16, 10, and 21 in the three preceding weeks, fell to 10 last week, and included 4 in Aberdeen and 2 each in Glasgow and Leith. The fatal cases of diphtheria, which had been 3, 2, and 6 in the three preceding weeks, further rose to 8 last week, and included 3 each in Glasgow and in Aberdeen. The deaths from measles, which had been 19, 12, and 17 in the three preceding weeks, declined to 7 last week, and included 5 in Glasgow. The deaths from scarlet fever, which had been 3, 7, and 4 in the three preceding weeks, rose again to 7 last week; 3 of the deaths occurred in Glasgow. The 2 fatal cases of enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 99, 95, and 77 in the three preceding weeks, further fell to 64 in the week under notice; 26 deaths were attributed to different forms of violence, against 24 in each of the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 641 births and 410 deaths were registered during the week ended Saturday, June 20th. The annual rate of mortality in these towns, which had been 17·8, 16·7, and 17·9 per 1000 in the three preceding weeks, fell to 17·7 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these towns averaged 19·5 per 1000; in the 97 large English towns the corresponding rate did not exceed 14·0, while in the 16 Scotch towns it was equal to 15·7 per 1000. The annual death-rate in the week under notice was equal to 17·6 in Dublin (against 12·2 in London and 15·2 in Glasgow), 17·1 in Belfast, 19·0 in Cork, 11·4 in Londonderry, 23·0 in Limerick, and 30·4 in Waterford, while in the 21 smaller towns the mean rate was 17·3 per 1000.

The 410 deaths from all causes were 3 below the number in the previous week, and included 50 which were referred to the principal epidemic diseases, against 36 and 40 in the two preceding weeks. Of these 50 deaths, 19 resulted from measles, 15 from infantile diarrhœal diseases, 8 from scarlet fever, 3 from whooping-cough, 3 from enteric fever, and 2 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2 per 1000, against 1·1 and 1·5 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 19, 21, and 16 in the three preceding weeks, rose to 19, and comprised 8 in Belfast, 5 in Dublin, 5 in Sligo, and 1 in Drogheda. The deaths of infants under 2 years referred to diarrhœa and enteritis, which had been 10, 4, and 10 in the three preceding weeks, further rose to 15, of which 7 were registered in Dublin and 6 in Belfast. The fatal cases of scarlet fever, which had been 6, 1, and 4 in the three preceding weeks, rose to 8, all of which occurred in Belfast. The deaths attributed to whooping-cough, which had been 11, 6, and 8 in the three preceding weeks, declined to 3, and were all recorded in Cork. The 3 deaths referred to enteric, of which 2 were registered in Belfast and 1 in Dublin, were slightly in excess of the average in the earlier weeks of the quarter. The fatal cases of diphtheria were recorded in Belfast and Lurgan.

The deaths referred to diseases of the respiratory system, which had been 85, 63, and 67 in the three preceding weeks, were 68 in the week under notice. Of the 410 deaths from all causes, 142, or 35 per cent., occurred in public institutions and 6 resulted from various forms of violence. The causes of 12, or 2·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes of death did not exceed 0·7 per cent.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 665 births and 364 deaths were registered during the week ended Saturday, June 27th. The annual rate of mortality in these towns, which had been 16·7, 17·9, and 17·7 per 1000 in the three preceding weeks, fell to 15·7 per 1000 in the week under notice. During the first 12 weeks of the current quarter the mean annual death-rate in these towns averaged 19·2 per 1000; in the 97 large English towns the corresponding rate did not exceed 13·9, while in the 16 Scotch towns it was equal to 15·6 per 1000. The annual death-rate in the week under notice was equal to 15·5 in Dublin (against 12·1 in London and 13·2 in Glasgow), 17·5 in Belfast, 12·9 in Cork, 10·1 in Londonderry, 12·2 in Limerick, and 13·3 in Waterford; while in the 21 smaller towns the mean rate was 15·9 per 1000.

The 364 deaths from all causes were 46 below the number in the previous week, and included 36 which were referred to the principal epidemic diseases, against 40 and 50 in the two preceding weeks. Of these 36 deaths, 13 resulted from measles, 11 from infantile diarrhœal diseases, 6 from whooping-cough, and 2 each from enteric fever, scarlet fever, and diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6 per 1000, against 1·1 and 1·2 per 1000 in the English and in the Scotch towns respectively. The deaths attributed to measles, which had been 21, 16, and 19 in the three preceding weeks, declined to 13 last week, and included 5 in Belfast, 3 in Dublin, and 2 in Sligo. The deaths of

infants under 2 years referred to diarrhœa and enteritis, which had been 4, 10, and 15 in the three preceding weeks, fell to 11 last week, of which 5 occurred in Belfast, 4 in Dublin, and 2 in Dundalk. The fatal cases of whooping-cough, which had been 6, 8, and 3 in the three preceding weeks, rose to 6 last week, and included 4 in Belfast. The deaths from scarlet fever, which had been 1, 4, and 8 in the three preceding weeks, declined to 2 last week; both deaths occurred in Belfast. The 2 deaths from diphtheria, one of which occurred in Dublin and the other in Cork, corresponded to the average in recent weeks. The 2 deaths from enteric fever were slightly in excess of the average; one occurred in Dublin and the other in Limerick.

The deaths referred to diseases of the respiratory system, which had been 63, 67, and 68 in the three preceding weeks, were 57 in the week under notice. Of the 364 deaths from all causes, 119, or 33 per cent., occurred in public institutions, and 1 resulted from violence. The causes of 10, or 2·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified deaths did not exceed 0·7 per cent.

THE SERVICES.

MARRIAGE "OFF THE STRENGTH."

IN face of the difficulty that at present exists in maintaining our military forces at their full authorised strength, any proposals that may increase the popularity of the army deserve careful consideration. They will always have a distinctly medical interest.

The great majority of soldiers serving with the colours must be unmarried, but the presence of a considerable leaven of married men has generally been held to have a good effect on the whole body of troops. The proportion of men allowed to marry, or whose married condition is recognised by the grant of certain allowances, varies from 100 per cent. in the case of senior non-commissioned officers down to 4 per cent. in the artillery and 3 per cent. in the infantry private. When placed on the married roll the man and his wife enjoy certain privileges and are granted certain allowances. But over and above the men who marry "with leave," in most corps there are many instances of soldiers who have married "without leave," and the condition of these men, their wives, and their families, very generally leaves much to be desired. An inquiry into this matter has been conducted by Mrs. Tennant, and her report [1] to the Secretary of State for War has recently been published. Mrs. Tennant is satisfied that hardship is caused by the present regulations to many men who are of an age at which they might reasonably expect to marry, but who, if they do so, must either leave the army or expose their wives to the poverty, discomfort, and distress almost inseparable from marriage "off the strength." This is particularly the case with sergeants in the home battalion of a regiment whose other battalion is in India. All the sergeants in the Indian battalion may marry, but only 50 per cent. of those in the battalion at home. When married sergeants come home from India, invalided or otherwise, they have to be absorbed into the home battalion before any of the sergeants in the latter may marry. To what extent marriage off the strength exists is apparently a question difficult to answer, the evidence adduced being very conflicting; but the conclusion was come to that in no case are the numbers negligible; its results are regarded as wholly bad, affecting both the fighting efficiency of the soldier (who shares with his family the rations intended for himself alone) and his health and general moral condition. Mrs. Tennant's principal recommendations are that all sergeants permitted to serve beyond 12 years should be allowed to marry, that 50 per cent. of the remainder should have the same privilege, and that a candidates' list should be established, admission to which would carry certain privileges, such as provision of convenient lodgings at a fair rent, instruction of the women in needlework and the care of infants, and the establishment of labour exchanges for women. For the young soldier marriage must be discouraged, and this discouragement must be "unwavering and untempered by contradictory charity." Other important recommendations are that the practice (at present permitted) of allowing men married off the strength to take their rations home should be absolutely prohibited, and that sleeping out passes should be restricted to married soldiers on the candidates' list. The proposals made would not, Mrs. Tennant thinks, lead to any great increase in expenditure.

Lady Haig contributes a report agreeing in many points with that of Mrs. Tennant: the establishment of a "waiting list" for men wishing to marry, from which they would pass on to the married establishment when a vacancy occurs; the building, or provision, of cheap quarters for families married off the strength, and the discontinuance of the practice of men taking their own rations home to their families are among the points regarded as essential. Mrs. Wilberforce would permit marriage off the strength to men of between 7 and 12 years' service under certain conditions. Mrs. Wavell chiefly insists on the utter misery resulting from marriages off the strength, and would grant no sleeping-out passes in such cases. The Hon. Mrs. Maxse would withdraw some of the privileges now possessed by the "off the strength" married woman, would establish a "waiting list," and confer certain privileges on those married couples admitted to it; she believes that the present military regulations "are the worst possible method of dealing with the question, and are, in fact, so illogical that they are not now carried out." Mrs. Robb does not believe that questions connected with the administration of the married roll are as carefully inquired into at generals' inspections as more purely military matters.

We have mentioned a few points specially emphasised in this report, which is a model of conciseness. The question is rather a difficult one to handle owing to the lenient view that has been taken for so many years of breaches of the regulations. We incline to think that a greater stringency or severity in the application of the rules laid down would in the end be the kindest course to pursue; this is the opinion of each of the contributors to the report, which is of a most thorough and exhaustive character, and deals admirably with a difficult subject. The Financial Secretary to the War Office stated in the Commons on Tuesday (June 23rd) that it is now being considered, and that action would be taken as quickly as possible to remedy the undesirable conditions.

[1] Report of an Inquiry by Mrs. Tennant regarding the Conditions of Marriage Off the Strength. Cd. 7441. London: Wyman and Sons. 1914. Price 2d.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been notified:—Staff-Surgeon: E. B. Kenny, to the *Pembroke*, additional, for disposal.

NAVAL MEDICAL RESERVE.

In order to afford officers of the Naval Medical Reserve opportunities of keeping in touch with the Naval Service in times of peace, His Majesty the King has approved, by an Order in Council, of such officers being re-employed or undergoing courses of instruction during peace in the following conditions: (1) To receive full pay at the rate of 17*s.* a day while re-employed or undergoing courses of instruction; and (2) to be under the same conditions as regards pension, &c., in case of death or injury as would be applicable in the event of their being called upon to serve in time of war or emergency.

ROYAL ARMY MEDICAL CORPS.

Colonel C. Birt has been appointed to officiate as Deputy Director of Medical Services to the Sixth (Poona) Division of the Southern Army in India.

Lieutenant-Colonel S. G. Allen has been appointed to command No. 28 Company, Royal Army Medical Corps, at Gibraltar. Lieutenant-Colonel E. M. Hassard has arrived home from India. Lieutenant-Colonel C. H. Hale, D.S.O., has been appointed to hold charge of the Military Hospital at Sialkot Cantonment. Lieutenant-Colonel E. G. Browne has taken up duty as Senior Medical Officer at Peshawar. Lieutenant-Colonel A. L. F. Bate has been appointed to the Recruiting Medical Staff at Woolwich. Lieutenant-Colonel H. E. Winter has been appointed to hold charge of the Military Hospital at Colaba, Bombay. Lieutenant-Colonel H. H. Brown has been appointed Senior Medical Officer to the North-Eastern Coast Defences at Newcastle. Lieutenant-Colonel W. E. Hardy has been appointed to hold charge of the Military Hospital at Calcutta. Lieutenant-Colonel C. A. Young has been transferred from Shrewsbury to Chatham.

Major H. G. F. Stallard, Mhow Division, has been appointed Deputy Assistant Director of Medical Services (Mobilisation) at Headquarters. Major J. G. McNaught has been placed under orders for service abroad. Major L. Addams-Williams has been transferred from Karachi to Quetta. Major H. L. W. Norrington has arrived home from Malta. An exchange on the roster for service abroad has been approved between Major R. Rutherford and Major J. S. Bostock; the latter officer will remain on the Home Establishment. Major C. T. Samman has taken up duty as Specialist in Mental Science to the Southern Army in India. Major R. L. Popham has joined at Peshawar. Major J. W. West has arrived home from India. Major J. Cowan has been transferred from Lahore to Pachmarhi Cantonment. Major E. W. Bliss has been appointed to the Chatham District. Major E. T. Inkson, V.C., has been appointed Deputy Assistant Director of Medical Services to the Wessex Division. Major J. G. Gill has arrived home for duty from Rangoon. Major E. E. Parkes has been appointed to the Military Hospital at Jubbulpore. Major J.

Tobin has arrived home from Gibraltar. Major H. M. Nicholls has been transferred from Poona to the Scottish Command. Major A. H. Safford has taken up duty in the Eastern Command. Major C. A. J. A. Balck has been appointed Specialist in Physical Training to the Dublin District. Major W. S. Harrison has been appointed Specialist Sanitary Officer at Jamaica. Major J. S. Gallie has been appointed to hold charge of the Military Hospital at Caterham.

Captain H. S. Dickson has arrived home from Gibraltar. Captain J. A. B. Sim has been transferred from the London District to the Aldershot Command. The following Captains have been placed under orders for service abroad during the coming trooping season: P. Davidson, D.S.O., H. B. Kelly, J. M. M. Crawford, C. Bramhall, H. J. J. Fawcett, and S. E. Lewis. Captain W. L. Baker has been transferred from the Eastern Command to the London District. Captain A. E. Hamerton, D.S.O., has been appointed to the Colchester District. Captain A. L. Stevenson has arrived home on leave of absence from Secunderabad Cantonment. Captain E. Bennett has been transferred from the Military Hospital at Purandhar to Deolali Cantonment. Captain G. Baillie has rejoined for duty at Colchester. Captain J. R. Yourell has joined at Rangoon. Captain A. L. Foster has arrived home from the Military Hospital at Aden. Captain D. S. B. Thompson has joined the Egyptian Army. Captain M. C. Wetherell has been appointed to hold charge of the Military Hospital at Fethard. Captain H. F. Joynt has been transferred from Cape Town to Wynberg. Captain A. S. Cane has taken up duty at Purandhar. Captain J. L. Wood has been appointed to hold charge of the Military Hospital at Richmond. Captain D. S. Buist has arrived home from Egypt. Captain S. S. Dykes has been transferred from Lebong to the Military Hospital at Dum Dum. Captain R. E. Todd has been appointed to the Public Health Department in Egypt. Captain L. V. Thurston has taken up duty in the Aldershot Command. Captain T. J. Mitchell has been transferred from the Military Hospital at Lahore to Subathu Cantonment. Captain W. J. Tobin has joined at Bangalore. Captain P. S. Tomlinson has been appointed to the Military Hospital at Roorkee. Captain O. R. McEwen has been appointed to the Irish Command. Captain C. E. L. Harding has been transferred from Quetta Cantonment to Aden. Captain A. G. Wells has been appointed to the Scottish Command. Captain J. Startin has arrived home on leave of absence from Satara Cantonment. An exchange on the roster for service abroad has been approved between Captain A. A. Meaden, serving at Colchester, and Captain J. M. H. Conway, adjutant of the Royal Army Medical Corps School of Instruction at Leeds; the former officer will proceed abroad instead of the latter. Captain E. B. Lathbury has arrived home for duty from Bareilly. Captain S. Field has been appointed to the Irish Command. Captain A. N. R. McNeill has taken up duty at Lichfield. Captain T. C. C. Leslie has been transferred from the Military Hospital at Youghal to the Allahabad Brigade. Captain J. H. Campbell has been appointed to Edinburgh.

Lieutenant F. S. Tamplin has arrived home from the Military Hospital at Gibraltar. Lieutenant S. D. Large has been appointed to the Scottish Command. Lieutenant W. L. Fretz has taken up duty at Peshawar.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. J. H. Bell, Inspector-General of Prisons, has been appointed to officiate as Inspector-General of Civil Hospitals in Burma, vice Colonel O. Evans. Lieutenant-Colonel A. W. T. Buist has been transferred from Campbellpore to Dalhousie. Lieutenant-Colonel G. McIver C. Smith has been transferred from Ludhiana to Murree. Lieutenant-Colonel S. H. Henderson has been appointed a Member of the Legislative Council of the United Provinces of Agra and Oudh. Lieutenant-Colonel C. T. Hudson has been appointed Civil Surgeon at Dharwar.

Major W. W. Jeudwine has been appointed to officiate as Civil Surgeon at Ferozepore, vice Major S. H. Lee-Abbott granted leave of absence. Major E. F. G. Tucker has arrived home from India. Major H. B. Steen has been appointed to officiate as Medical Officer to the 24th Parganas and Medical Inspector of Emigrants during the absence of Lieutenant-Colonel E. A. R. Newman. Major H. A. H. Robson has been appointed Civil Surgeon at Murshidabad in addition to his own duties. Major G. King has been appointed Civil Surgeon at Manbhum. Major W. H. Cazaly, medical officer 125th Rifles, has been appointed Specialist in Advanced Operative Surgery to the Fifth (Mhow) Division.

Captain L. P. Stephen has been appointed to hold civil medical charge at Ratnagiri. Captain T. S. Ross has been placed on special duty in Madras. Captain R. G. G. Croly has been appointed to Madras Presidency in the Civil Medical Department. The services of Captain W. L. Harnett, civil surgeon at Kamrup, have been placed at the disposal of the Government of Bengal Presidency. Captain D. C. Kemp has been appointed District Medical and Sanitary Officer at Tinnevelly and Medical Officer to the Central Jail at Trinchinopoly. Captain W. Lapsley has been appointed to the Civil and Prison Department at Gonds. Captain C. M. Goodbody has been appointed Director of the Medical Department in Bikaner State. Lieutenant E. R. Armstrong has been placed in charge of the Bacteriological Research Laboratory at Brigade Headquarters at Jhelum Cantonment.

THE MILITARY SURGEON.

The June number of the *Military Surgeon* is chiefly concerned with the regulations of the Medical Corps of the United States Army, particularly with a circular to Militia medical officers, who may perhaps be called to service in Mexico. The importance of their work in recruiting is emphasised, and their duties in watching the conservancy of camps and securing prophylaxis of venereal diseases and typhoid fever are very distinctly enforced. THE LANCET'S account of the dinner in London to Surgeon-General W. C. Gorgas is reprinted. It caused some searchings of heart that the military surgeons of the United States at their recent meeting, in accordance with their regulations, only saluted at the last note of the British National Anthem, played in honour of the arrival of an English guest, who stood at the salute all through. Crotalin, rattlesnake poison, is a dangerous drug it is almost impossible to sterilise completely. Over one-third of the specimens investigated at the Hygienic Laboratory in Washington were found not to be sterile. As it causes a local necrosis and almost destroys the bactericidal properties of the blood its use requires the utmost caution. A fatal case, in which it was being used for epilepsy, has been reported. Major Lyster has had his method for purifying water adopted by the army. A canvas bag weighing 6½ lb. and holding 38½ gallons of water has 15 gr. of hypochlorite of lime dissolved in it. The water is sterile after five minutes and the water bottles are filled from taps fitted at the base of the bag. There is an account of the hospital train of the Constitutionalist General Villa in Mexico. There are 25 cars; one is an operating room, one for bad cases, one for the staff, one for food, one for dressings; other cars had tiers of canvas cots and seats for wounded. There were 12 native surgeons and 20 male nurses. The train also carried the equipment for eight field hospitals and other medical stores. General Villa is reported to have said after the battle of Torreon that every wounded soldier was on the hospital train when the engagement closed. Major P. P. Lester, of the Colorado National Guard, was shot and killed by strikers near Walsenburg, Colorado, when attending a wounded militiaman under fire on April 29th.

VOLUNTARY AID DETACHMENTS.

The War Office announce that a committee has been appointed to inquire into the working and organisation of voluntary aid detachments. The chairman is Sir W. R. Lawrence, Bart., and the medical members of the committee are Colonel Sir George T. Beatson, K.C.B., Colonel Sir J. R. A. Clark, Bart., Major Sir Anthony A. Bowlby, C.M.G., and Surgeon-General W. G. MacPherson, C.M.G. The secretary is Lieutenant-Colonel G. B. Stanistreet, R.A.M.C.

ROYAL SOCIETY OF MEDICINE: ELECTRO-THERAPEUTIC SECTION.—An interesting meeting of this section took place at Oxford on June 27th. Many members met together at the Radcliffe Infirmary for tea, and later Sir William Osler addressed the section. Sir William Osler made some interesting remarks drawing attention to the astonishing progress in the electrical treatment of disease and in radiography in recent years. It was remarkable that two of the pioneers to whom electricity owed much were both laymen—John Wesley and Franklin. Of course there was no doubt that the real founder of electrical methods was Duchenne—the first who placed the electrical diagnosis of disease on a sound foundation.—Immediately following Sir William Osler's short address an excellent demonstration of the instruments and methods used in Oxford was given by Dr. W. J. Turrell, physician electrotherapeutist to the Radcliffe Infirmary. Dr. Turrell specially drew attention to diathermy and the use of the static machine, and later he showed many interesting cases that he had treated. The members of the section were delighted with the survey of the new building of the infirmary, and particularly with the complete installation in the electrical department. A dinner subsequently took place at Queen's College, Mr. C. Thurstan Holland, President of the section, in the chair, and the guests included Sir William Osler, Professor Perkins, the Rev. C. Cronshaw, treasurer of the Radcliffe Infirmary, and others. Sir William Osler proposed the health of the section, which was replied to by the President, who also heartily thanked Dr. Turrell for the trouble he had taken and the excellence of his demonstration.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Concluded from p 1342.*)

L.—NORFOLK AND NORWICH, WITH A NOTE ON IPSWICH.

FROM Lowestoft I went back into Norfolk, selecting naturally Norwich as the centre from which to make my investigations. Here I first interviewed men holding high positions on one or more of the committees concerned in working the Insurance Act, and I found that opinions and anticipations differed widely from those propounded by equally good authorities in Lancashire and Yorkshire and in parts of Scotland. One leading and representative practitioner found his fellow medical men in Norfolk "too individualist for anything like organisation. They are all little Popes and resent any interference; yet they are up against many social problems that can only be solved by legislation following on collective action." Certainly something very similar was said to me at Edinburgh by those who were opposed to the Act, but in the industrial districts of England and Scotland on the whole a contrary opinion is being held. It is generally assumed that medical men now see the necessity of union, only they find it difficult to agree upon the course for which they should unite. In Norfolk a pronouncedly independent spirit makes common procedure difficult. The Act is resented by some because it has brought with it common procedure, and establishes committees to interfere in a man's private affairs and leads to compulsory levies. The Norfolk men expect Panel Committees to become more and more bureaucratic, and many of them do not view the idea with relish.

The Medical Committee and the Panel Committee.

In Norfolk the Local Medical Committees have a voluntary levy, and panel practitioners now have to pay in two directions. Practitioners not on the panel may voluntarily subscribe to maintain the Medical Committee as an independent authority, as a counterweight to the Panel Committee; but for the most part the practitioners are on the panel, and a compulsory levy forces them to pay also for the Panel Committee. The question has arisen, particularly in the minds of the more peacefully inclined, whether the two committees are likely to be so constantly in conflict, and this on sufficiently important matters, for it to be worth while paying for both. Those less reconciled to the Act hold that because the attitude of the Government implies that Medical Committees are no longer wanted since the doctors have now got the Panel Committees, the medical men had better be careful to keep the former committees going, for the Panel Committees are considered to be too bureaucratic really to allow of representation of professional views. The Medical Committee is important because it will ensure that the profession should be considered as a whole, for there are interests that relate to the Insurance Act and concern others than the panel doctors, and those others should be heard, especially when problems of public health or preventive medicine are under consideration. The continued existence of the Medical Committees might also be a ready means of intercommunication between consultants and practitioners on the panel.

Lack of Union in the Profession.

The above impressions reflect conversations with prominent practitioners concerned with the Norfolk insurance area, who also say that political differences have exaggerated the discord among medical men. In the insurance area of the county borough of Norwich I found no great difference of thought. There is a Local Medical Committee for the city of Norwich, but doubts were expressed as to whether its voice was effectively heard. One Norwich practitioner declared to me that he did not believe that the profession would ever be able to fight again, and confirmed what his country colleagues had said. "We are all individualists," he remarked; "we cannot unite; the Act showed that there was no unity in us. Such a thing as a general union of the profession now does not seem at all likely." And it is a fact that the profession never realised the promise made that they would have the advantage of collective bargaining and they do not now understand what that means. It is a fact also that when workmen engage in a battle they are, as a rule, much better informed as to their own powers and willingness to resist than the medical profession has ever shown itself to be.

At Norwich the working of the Act is neither exactly satisfactory nor the reverse. Very few cases of contracting out have been allowed, but a good number of persons applied to be allowed to make their own arrangements because the doctor who had attended them for a long series of years was not on the panel. The refusal in some of these instances was deeply resented.

The Norwich Medical Institute.

At Norwich there is a medical institute, an old-established organisation which employs three whole-time men; it is popular because it is well organised. I have been able to obtain full details, which has not always been the case when I have tried to inquire into the working of similar bodies. Out of a population of 123,288 inhabitants it appears that about 45,000 are insured, and rather more than 6400 of these insured persons belong to the institute. Adding the wives and families, the total membership of the institute is probably 11,000. This seems too large a crowd for only three medical officers to cope with, but I was asked to remember one or two things. First, the wives and families have to pass a medical examination and are not accepted as members unless the result of the examination is satisfactory. Secondly, the medical officers have no private patients to see or any dispensing to do. Thirdly, the work is carefully organised. In regard to visiting, the medical officers have divided the city into districts so that there is no overlapping and the patients live close to each other; and they see each others' patients when thought necessary. There are two dispensers, and a secretary does all the clerical work. Carriage hire is provided when necessary, and one of the medical officers having a motor car receives an annual sum to cover the cost of its upkeep.

The Sweating Question.

The medical officers of this institute are very anxious to repudiate the suggestion that they are sweated. From a statement submitted to me in regard to the financial aspect of the matter, it appears that before the Insurance Act the medical officers received a fixed salary that never exceeded £305, plus midwifery and certificate fees. When the Insurance Act came into force the medical officers suggested that they should work on a

percentage basis, and this the lay committee of the institute accepted. Of the 9s. the dispensing department receives 2s. The chemists obtain 44 per cent. of the 2s., and the rest pays for the drugs, the upkeep of the dispensary, &c. The remaining 7s. goes to the medical staff. Eighty per cent. of this sum is divided equally between the three doctors. The remaining 20 per cent. covers the carriage hire, upkeep of premises, cleaning, lighting, secretary's salary, stationery, &c. The income derived from the non-insured members of the institute is also divided in a similar manner among the medical staff, only they are given a smaller percentage. In the result, the three whole-time medical men employed by the institute receive £700 a year each exclusive of midwifery.

The medical officers claim, therefore, that they are not sweated, which shows that they do not use the word in its strict meaning. Under the sweating system many workers earn high wages. Sweating is not synonomous with bad pay. It means the process by which a third party—insurance agents or medical institutions in the case of medical men—can obtain a profit out of what the patient pays for medical service before the money reaches the medical attendant. The question is not whether the institute pays a good price to its medical officers, but whether it retains for its own benefit any part of the money paid by the patients for medical attendance.

In regard to overwork, which with low wages is so often associated with sweating as to be likewise, but erroneously, considered a part of the system, the medical officers to the institute make no complaint. One of them states that his visits average from 16 to 18 a day. Without counting the signing of certificates, and excluding Sundays, he sees for consultation at the surgery some 50 patients per day. This occupies three hours—an hour and a half in the morning and again in the evening. Each of the three medical officers takes in turn Sunday duty, and they also have a half day entirely free every week. "You will understand, therefore," said one of these to me, "why I resent the statement that all medical officers of institutes are third-rate practitioners giving only shoddy service in return for miserable pay. I have previously been in private practice, and when I remember the bad debts, the bookkeeping and dispensing, and the professional out-goings, I think there is no comparison between the possibilities of good work offered in private practice and institutional practice. That will also explain why I am a believer in a State service."

Increased Prosperity of the Medical Profession.

This roseate view of institutional work may not be borne out in other parts of the country, but there are grounds for it here.

There is a large working-class population at Norwich. Street after street is occupied almost exclusively by artisans, labourers, and employees of the several large factories. Before the Act came in force a very large proportion of these people belonged to clubs or friendly societies. They were consequently well accustomed to the limitations and inconvenience of contract practice. The better-class clubs paid 5s. a year for medical attendance and medicine, though the institute only got 3s. from its members. Consequently the doctors who attend patients by contract are very much better off than before, while, as already explained, the doctors at the institute, whose maximum salary was £305, now receive £700. There are 32 doctors on the panel, the majority of every available practitioner. As wages are low in Norwich there are not many fees to be obtained from the working class, and therefore in the past, as now under the Act, a very large proportion of the medical practice was contract practice. Women, children, and dependents generally belonged and still belong to clubs. There are juvenile clubs in Norwich to-day.

To prevent abuse by enforcing a wage limit a Public Medical Service was organised which attends to the dependents of many insured persons. Thus the amount of private practice that might be obtained through panel practice is very considerably reduced. Under such circumstances one of the leading Norwich practitioners insisted that the remuneration—the 9s. set aside by the Act for the medical service—was in no wise excessive when all the work involved, including the cheaper work that had to be done by the side of the panel work, was fully taken into consideration. He felt convinced that if this payment was reduced a good many practitioners would leave the panel.

The Allocation of Patients.

At Norwich, as elsewhere, there are some lists which are too long in my opinion, admitting, however, that a panel doctor who has a list of 3000 insured persons and no private patients might have some leisure, while another doctor with a list of only 1000 but a good many private patients would be more overworked. The difficulty is not with the visiting. The drawback of the system, as manifest at Norwich as at other places I have visited, can be found in the surgery, where the crowd is often far too large. Yet there have been no special complaints against the possessors of long lists. At the end of the first year's working, when those who might have cause to complain could go to another medical adviser, not one-half per cent. of the insured persons at Norwich asked to change their doctor. This seemed to indicate general satisfaction. Therefore when it comes to the question of dividing the fund created by those who have not selected a medical attendant the argument is that it is a fair presumption that those who have not made their choice would follow the lead of the majority. At Norwich the number who have not made their selection amounts to less than 3000. It is proposed to divide half the money equally among all the panel doctors and to give the rest out in proportion to the lists, those who have the longest lists receiving proportionately more.

But there is not only the question of dividing the money, there is the allocation of the insured persons who have not chosen a panel doctor. It appears that this will not be attempted at Norwich, at least not for the moment, though it has been done, and from what I can hear successfully, in the county of Norfolk. At Acle, for instance, where I paid a short visit, the local practitioners met in a friendly way and went over the list of those who had not selected a medical attendant. If anyone present had a claim, such as having already attended the person on some former even if distant occasion, the name was at once put on his list. Those whom no one knew were given to the nearest practitioner, or if two practitioners lived near to each other then those persons living in their neighbourhood were divided evenly between the two. This sort of friendly arrangement, it appears, cannot be managed so easily in a big city like Norwich.

The Indifference of the Insured.

A practitioner at Norwich not on the panel, who was attached to the Public Medical Service when the Act came into force, told me that he thought that the panel doctors were working well and doing well, but he complained of the absolute carelessness of the public. When he told some of his old club patients that he was not on the panel they loudly exclaimed, "What shall we do?" He suggested they might go on this or that panel, and they readily answered "All right," but went off without seeming to care in the least, and forgot to follow the advice. "And they will forget," he added, "until they are ill." On the point of contracting out, he urged that there were instances when patients should not leave the doctor to whom they had been accustomed for many years because he did not happen to be on the panel, and he was glad to think (I may say that he was in a position to know) that at Norwich the authorities were now giving permission to contract out of the Act more freely. My impression is that they are also realising that some of the panels should be reduced.

Some practitioners whom I interviewed complained that the working of the Act was not watched sufficiently by the medical profession or the public either. Thus in the county of Norfolk out of 92,000 insured persons the panel doctors have been credited with only 85,000. The authorities attribute this discrepancy to some extent to duplication of names, and cases were quoted to me of people entered in more than one list under slightly differing names. But this sort of error can only account for a small part of the deficiency.

The general impression prevails that the Act is working better in Norfolk than in most counties; the doctors have been glad to get a substantial increase of income. The average for the county would be a list of 520 insured persons for each panel doctor, and this average is fairly well maintained except on the borders of Norwich.

Medical Referees.

In regard to the question of referees, it does not seem that a satisfactory solution has been found here. The County Insurance Committee agreed that in each case the nearest practitioner should be the referee, and that he should receive a half-guinea fee and 1*s.* 6*d.* mileage beyond the first mile. No one knew, however, whether the Insurance Commissioners would approve, and it is certain that the panel doctors themselves are doubtful about it. It appears that if the doctor himself calls in the referee he will have to pay the fee, but it is more likely that a panel doctor will resign himself to lose one person from his list rather than pay a half-guinea fee. An Approved Society might occasionally find it advisable to incur such an expenditure; yet as the referee is not to be a recognised authority, but only the nearest neighbour, it may not always be considered worth while appealing to him. The neighbour may be quite a young man who has only recently commenced practice, or for this reason or that a practitioner whose opinion in the particular case would inspire no special confidence. Again, and whatever their respective standing in the profession, it is awkward for close neighbours to sit in judgment over each other's work. The temptation will be to let each other down gently, and that is not the object for which an appeal is made to a referee. Indeed, it looks as if the proposal was a manœuvre, a means of saying that something has been done, though in actual practice it is very unlikely that the services of such referees will ever be required.

Similar Problems at Ipswich.

I conclude this series of articles with a brief note on a visit which I paid to Ipswich this week. I found here conditions exactly analogous to those which I have so often described, and I will not at the present moment enlarge upon them. There was at Ipswich the same distinct spirit of resistance to the Act, the same annoyance among certain both of employers and employees at the compulsory contributions, the same rise in income coupled with an increase of work among some of those practitioners employed in contract practice, while a good many of the insured persons in Ipswich continue to employ and pay private practitioners. The record of sickness has obviously much increased since the Act came into force, and this was especially noticeable in a small women's club the figures in relation to which I obtained. The urgent need for referees is felt, and Ipswich is contemplating an elaborate scheme for their institution. The staff of the East Suffolk Hospital, which charity receives large sums from the working men of Ipswich, have arranged that the out-patient department will see an insured person once as a casualty; and then, if he desires to remain under hospital treatment instead of going to his panel doctor, his case is submitted to the honorary staff for decision. This seems to me to be a judicious method of dealing with a situation which has been embarrassing in many towns that I have visited. The subject is one to which I hope to have an opportunity of soon returning.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 429, Strand, on June 19th, Mr. J. Brindley-James being in the chair. The claim account presented still showed an improvement over that of last year, and the proposals received in these first five months constitute a record in the society's experience. The new combined sickness and endowment table with reduced premiums for the first five years is also proving popular with younger members of the profession. The votes for Epsom College were dealt with at this meeting, there being two candidates for Foundation Scholarships who are the sons of deceased members. The widow of a late member was also applying for a pensionership. The society subscribes £105 per annum to the College, and consequently controls a number of votes which are all used for the relatives or friends of deceased members.

LONDON DERMATOLOGICAL SOCIETY.—The annual general meeting of this society was held on June 16th at St. John's Hospital for Diseases of the Skin, Leicester-square, W.C. The President, Dr. Morgan Dockrell, presented the council's annual report, and said that the society had had a successful year, thanks chiefly to the large amount of clinical material they had at their disposal. Forty new Fellows had been elected during the year. The result of the election of officers for the ensuing year was announced as follows:—President: Dr. W. Griffith. Vice-President: Dr. Morgan Dockrell. Honorary Treasurer: Dr. W. Knowsley Sibley. Honorary Secretaries: Dr. J. L. Phibbs and Dr. Simonds Gooding. At the clinical meeting which followed Dr. J. L. Bunch showed a case resembling a Nodular Acne of the Face, from the lesions of which the ray fungus had been grown. —Dr. W. Griffith showed a case of Erythema Iris affecting the hands and mucous membranes.—Dr. W. Knowsley Sibley showed a case of Lupus Vulgaris which had been treated for over a year with tuberculins without improvement, but which was now improving under nascent-iodine treatment.—Cases of syphilis were shown by the President and Dr. J. L. Phibbs, and a paper was read by Mr. C. H. Mills, entitled "Some Points in the Treatment of Syphilis."

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

MANCHESTER.

Memorial to Mr. Walter Whitehead.

ON June 27th the strikingly ornate, tall, and artistic monument—erected in a triangular plot of ground which has been converted into a charming garden — was presented to Bury by Mr. Henry Whitehead, in memory of his brother, Mr. Walter Whitehead. Sir Frederick Treves formally opened the gate of the gardens surrounding the memorial. The clock tower itself is 12 feet square and rises to a height of 80 feet above the ground. At the top is a clock with four dials 5 feet 6 inches in diameter. The dials can be illuminated at night by electricity. A bronze figure, 6 feet 6 inches high, is placed in a niche over the entrance doorway. The tower is built of Portland stone, resting on a concrete foundation 30 feet square, while the base of the tower is formed of polished Aberdeen granite steps.

Salford and Maternity Centres.

The health committee of Salford has asked the council to adopt a resolution similar to the following passed by the St. Helens corporation:—

That in the opinion of this council it is vital to the public health of the country that all schemes dealing with infant mortality and child welfare should be administered by the constituted sanitary authorities under the direction of the Local Government Board; and that the time has arrived when adequate grants should be made to those authorities to enable them to establish maternity centres and similar institutions dealing with the care of infant life.

Defective Sight in School Children.

From the last report of the school medical officer, Dr. A. Brown Ritchie, it appears that six medical men along with a number of nurses devote all their time to health matters in connexion with 185 schools in Manchester. By the new arrangements each child will be examined three times in the course of its school career. There is an improvement in the attitude of parents towards the provision of spectacles, though there are still a fairly large number of parents who require considerable pressure before they provide the spectacles necessary. Teachers take a keen interest in detecting cases of defective vision.

Memorial to the late Mr. T. H. Pinder.

A fund has been started for a memorial to the late Mr. T. H. Pinder, who for many years was connected with the Hospital for Diseases of the Ear. It has not yet been decided what form the memorial will take. A subcommittee has been appointed to confer with the hospital committee.

June 30th.

IRELAND.

Death of Mr. F. T. P. Newell, M.B. Dub., F.R.C.S. Irel.

I RECORD with regret the death, at the comparatively early age of 54, of Mr. Newell, a well-known Dublin practitioner. He had been suffering for some months past from a tumour of the neck, and the end came last week as the result of hæmorrhage. For more than 20 years Mr. Newell was a Poor-law dispensary officer in one of the city districts. For the past three or four years he was a member of the Council of the Royal College of Surgeons, and was regarded as the representative of the general practitioners on that body. During the professional struggles of the past three years his presence on the Council was of special value both to the College and to the general body of the profession, and it was in large measure due to his influence that the Council adopted a strong attitude in regard to conduct in the administration of the National Insurance Act which might be regarded as unprofessional. Mr. Newell was one of the most active members of the Dublin Local Medical Committee, and he was also a member of the Irish Medical Committee. He was an upright man, much respected both by his colleagues and the public, and held in warm affection by those who knew him best.

Belfast District Lunatic Asylum.

From the annual report for 1913 of this asylum it appears that there were 276 admissions, while 148 were discharged and 145 died. On Dec. 31st, 1913, there were 1232 inmates, 598 males and 634 females. Of those admitted, eight were over 70 years of age. The gross expenditure for the financial year ended March 31st, 1914, was £29,946 5*s.* 10*d.* More than two-thirds of the patients are now in the new colony at Purdysburn, and the remainder—with the exception of 37 at Ballymena—are in the old buildings at Grosvenor-road, Belfast.

Laurelvale Water-supply.

The Local Government Board have sent a sealed order to the Tandragee rural council, county Armagh, stating that whereas complaint had been made to them that the council had made default in providing a proper supply in Laurelvale—a district where there is an industrial population—they directed that the council shall set about the performance of their duty in the matter within a period of three months. It was decided by the Tandragee rural council to engage a civil engineer to report on the question, and a subcommittee was appointed to consult with him. For a long period this matter of the water-supply of Laurelvale has been in dispute, and typhoid has occurred at times owing, it is alleged, to the impure water from wells. It is quite time the people in the area had a reliable supply of pure water.

June 30th.

PARIS.

Students' Grievances.

THE new régime for medical studies has been in operation since November, and the first year's examinations have just taken place. The students complain of unwonted severity on the part of the examiners, and the number of rejected is certainly much greater than ever before. It would be hard to assert that the examiners have exercised intentionally undue rigor, particularly as the medical syndicates have often proclaimed that the examinations should be searching especially at the beginning of medical study, so as to eliminate promptly those students who do not show any real aptitude and so would only encumber the profession. Once a student has fully entered on his studies and has passed with greater or less effort his first examinations, he is almost certain to complete them after a longer or shorter time, for in the end the examiners are merciful to a candidate who perseveres in spite of frequent rejection. It is possible that this consideration has led them to

exercise a selective faculty at the beginning of the course, in cases where a real vocation or its absence is clearly indicated. The Coöperative Association of Medical Students, however, is dismayed at the disastrous results, and has called on the doyen of the Faculty of Medicine to complain of this unwonted severity. It even asserts that the examiners have imposed on the candidates questions that ought not to be admitted in the first year. The doyen could only reply that he would consider the points raised and urge upon the students to work with greater energy, so as to raise the entire level of medical study.

An Aeroplane Ambulance.

At the great military manœuvres of last year attempts were made to use aviators in searching for the wounded after a battle. The results were very good, and many wounded were undoubtedly discovered who would have remained a much longer time without assistance under ordinary methods. Dr. Raymond, who is a Senator and himself an aviator of considerable ability, made these attempts with marked success. And now a woman aviator, Mdlle. Marvingt, has extended this idea by having a special aeroplane constructed to accommodate, besides the aviator, a medical man and also a covered litter on which the wounded man can be placed for transport. To collect the necessary sum of 36,000 francs for the construction of this apparatus she has arranged aviation meetings and conferences throughout France, the proceeds of which are to be devoted to this work, and has collected already some 21,000 francs. She thinks that this aeroplane ambulance will be of service, not only in a European war in which battles finish only with nightfall and so render a search by aeroplane very difficult, but in colonial wars also, in which many wounded run the risk of being left in the desert, hidden by the inequalities of the land which impede observation in the case of those on foot, but are easy of survey from above. It is true that landing presents peculiar difficulty in these conditions, and it is hardly likely that this new method of aid to the wounded can become general. But the effort is charitable and worthy of all sympathy.

Antityphoid Inoculation made Compulsory in the Army.

The principle of compulsion in regard to antityphoid inoculation in the army was affirmed by Parliament in a law dated March 28th. A ministerial order has now laid down the conditions of its application. All officers and men of troops quartered in regions where the appearance of typhoid fever may reasonably be looked for, from former or recent experience, must be immediately inoculated. Garrisons in which the typhoid mortality during the past five years has exceeded an average of 2·87 per 1000 are so qualified. All white troops in Algeria, Tunis, and Morocco, and all soldiers under orders to serve in Morocco, must also be inoculated. The last class will not be allowed to proceed there until they shall have undergone the complete series of preventive inoculations. All military nurses must be inoculated immediately when individual contra-indications do not exist. Troops also about to manœuvre in districts where typhoid fever has recently been present among the civil population must be inoculated. Finally, on October 1st this year all soldiers with the colours who do not belong to any of the preceding categories must be inoculated, beginning with the new recruits. All these orders must have been complied with by Dec. 1st. The Minister, having regard to the observations laid before the Senate during the discussion on the Bill, has conceded that the military medical officer shall always have the power to exempt temporarily from inoculation any one whose state of health for any reason shall appear to render the operation especially risky.

June 29th.

BERLIN.

Removal of Injurious Micro-organisms from Vaccine Lymph.

Dr. Friedberger recently read a paper before the Berlin Medical Society on the "sterilisation" of vaccine lymph by means of the ultra-violet rays. He said that a satisfactory method of removing extraneous microbes from vaccine lymph had not until now been discovered, because chemical germicides necessarily diminished the prophylactic efficacy of the lymph. This was also the case with glycerinated lymph, the addition of glycerine producing only a very slow decrease of virulent germs, so that this lymph could not be used in a fresh condition, and much of its activity was sacrificed. He had therefore endeavoured to find some method which would destroy the virulent bacteria without tedious delay and without impairing the valuable properties peculiar to the lymph. Ultimately, in conjunction with Dr. Mironescu, he discovered that the ultra-violet rays produced the effect desired. Exposure to the radiation emitted by a Kromayer lamp for 20 or 30 minutes destroyed the bacteria present in fresh vaccine lymph, the latter remaining efficacious even when the exposure to the rays was continued for one or two hours. When spores of the bacillus anthracis and of the bacillus subtilis were intentionally added to the vaccine lymph the result was that a considerable time was necessary for the destruction of those organisms, but the lymph was still efficacious for vaccination, although its activity was lessened.

A New Method of Testing the Strength of the Heart.

At a recent meeting of the Berlin Society for Internal Medicine Professor Katzenstein read a paper on a new method of testing the strength of the heart. The characteristic feature of his procedure is that he ascertains the number of the beats and the blood pressure before and after a compression of both crural arteries. When the strength of the heart is sufficient the number of the beats decreases, and the blood pressure increases after the compression. In slight insufficiency both remain unaltered, and in severe insufficiency the number of beats increases whilst the blood pressure is sinking. This method has proved valuable in many cases. It may also be used for ascertaining any damage done to the heart by narcotic compounds. When the test gives an unfavourable result general anæsthesia is contra-indicated for such patients, and only local anæsthesia ought to be employed. In nervous patients, however, the method is not reliable.

The Law Relative to Agreements Restraining Medical Men from Practice.

An important judgment was recently given by the Supreme Court of Justice in Leipzic. On the occasion of a medical strike a medical man had accepted an appointment at a sick club the medical officers of which had resigned. The Leipziger

Verband then induced him to leave his appointment by paying him 6000 marks (£300) on condition that he not only resigned this appointment but also pledged himself not to settle as a medical practitioner in Germany for the ensuing ten years without the consent of the Leipziger Verband. He did not keep this agreement, and the Leipziger Verband accordingly brought an action against him for the repayment of the money which he had received. The Supreme Court, however, in its final judgment declared that an agreement by which the right of settlement was limited by or made dependent upon the goodwill of another person was against the law, and therefore incapable of being enforced. This decision will very much hinder the action of the Leipziger Verband, because when the medical officers of a sick club resign in a body on account of some grievance and the club managers appoint substitutes it will in future be impossible to restrain the latter by money payments.

Accidental Loss of a Quantity of Radium.

A private sanatorium in Berlin has recently sustained a heavy loss by the negligence of a servant. One of the medical men attending patients in the sanatorium had applied radium of the value of 20,000 marks (£1000) to a patient. It was enclosed in a small capsule, and when the application was discontinued the capsule was put in a basin which was afterwards cleaned by a servant. The man did not know what the capsule was, and after cleaning the basin he poured the water, together with the capsule, into a sink, from which it ran into the sewer. The loss of the valuable material became known only after the lapse of some hours, and although the sewers were searched for several hours by a number of workmen and a reward of 2000 marks was promised, the valuable little capsule was not found.

June 29th.

UNITED STATES OF AMERICA.

Yale Medical School.

Yale University has received the sum of $125,000 (£25,000) for the erection and equipment of a chemical and pathological laboratory to be known as the Anthony Brady Memorial Laboratory. The announcement has also been made that members of the Brady family will establish the Anthony N. Brady Memorial Foundation of $500,000, the income of which is to be given annually to the University for a term of ten years, in order to enable the University to declare operative at the time the agreement with the General Hospital Society of Connecticut, and to conclude the alliance between the New Haven Hospital and the Medical School of Yale University. If within the ten-year period the University receives a total of $2,000,000 for medical school endowment the $500,000 will become the absolute property of the University. Over $1,110,000 have already been promised, and if $390,000 more are obtained before Jan. 1st, 1915, the General Education Board will give the $500,000 necessary to make up the $2,000,000.

Fund for Johns Hopkins University Medical School.

Mr. Abraham Flexner, of New York, representing the General Education Board founded by Mr. John D. Rockefeller, has made recently final arrangements to turn over to the Johns Hopkins University Medical School the sum of $1,500,000 to establish the William H. Welch Endowment for Clinical Education and Research. The Johns Hopkins Medical School is the first medical institution in the United States to receive money for research work from the General Education Board.

Diagnosis of Cancer.

At a meeting of the executive committee of the American Society for the Control of Cancer held recently the following resolution was adopted:—

That it is the belief of the executive committee that the City of New York should undertake free diagnosis of specimens of tissue suspected of being cancerous.

It is stated that the New York Department of Health now has the question under consideration and will consult with its Medical Advisory Board before taking action.

The Coroner's Office in New York City.

The recent trial of a coroner in New York City for neglect of duty may lead to the abolition of the ancient office. An investigation of the department by the Commissioner of Accounts has been ordered by the Mayor of New York at the request of the City Club, and as a result the need for an independent official investigation is urged, because of the serious charges made affecting the efficiency and integrity of the performance of the coroner's function in the city.

Street Accidents in New York City.

The National Highways Protective Society has reported that during the month of May 45 persons were killed by vehicle traffic in the streets of New York. Thirty-two of those thus killed, or more than 70 per cent., were less than 16 years of age. During the month of April 5352 accidents occurred on the railroads and street railways under the jurisdiction of the Public Service Commission of New York. As a result of these accidents there were 26 deaths, as compared with 17 in April, 1913, and 22 in April, 1912. In addition 9 persons had their skulls fractured, 3 lost an arm or leg, and 142 were injured seriously.

A False Alarm.

Dispatches from Bogota state that it has been determined by bacteriological tests that the epidemic now prevailing in Colombia is not bubonic plague.

June 25th.

CHINA.

The Health of Shanghai in 1913.

THE annual report of the health department of the Shanghai municipal council, written by Dr. A. Stanley, the medical officer of health, is of value, as it concerns the only place in China where definite statistics are available to indicate the prevalence of diseases both among foreigners and Chinese. Within the area of the municipal limits (8¾ square miles) there is a population of 14,250 foreigners and 510,000 Chinese. The death-rate among the former was 21·5 per 1000 and 15·8 for the Chinese. But it is noted that 135 of the 305 deaths recorded among foreign residents were Japanese, and that 21 of these were due to beri-beri, which rarely affects non-Asiatics. Instead of the term "non-Asiatic" one might put "non-rice-eaters," but this view, so generally accepted, does not find favour with Dr. Stanley, who still remains, by the evidence he gets in Shanghai, in favour of the opinion that beri-beri is an infective disease "having no relation to food, but infective through body vermin." A diminution in the number of cases of this disease in the municipal gaol is held to be attributable to the measures of

disinfestation of body vermin among the convicts. The incidence of small-pox, typhoid fever, dysentery, tuberculosis, and scarlet fever was abnormally high. As regards scarlet fever an unfortunate factor is the extreme virulence of the infection met with in China, it being more than four times as deadly as it is in England, and there is no indication yet of a decrease in virulence. Although scarlet fever has hitherto failed to establish itself firmly in any part of Asia excepting Asia Minor, and is practically unknown in the tropics, it appears to have come to Shanghai to stay, since its introduction in 1900, probably by foreign immigrants. As would be expected with a recently introduced disease, against which evolution has afforded no natural immunity, scarlet fever has been of a virulent type among the Chinese. It is probable that the passage of the disease through the susceptible Chinese has led to an intensification of the virus, so that it is more fatal to foreigners also. There were 12 non-Chinese and 207 Chinese deaths from small-pox. In Shanghai there exists so much small-pox infection that it is advised that vaccination should be repeated every three years till it no longer takes. Over 13,000 free vaccinations were provided by the Health Office during the year under review. No city in the world is probably so favourably served as Shanghai in the disposal of refuse. Over 150,000 tons of garbage and ashes have to be removed yearly from houses in the settlement, and this is done at a very low cost. Cement bins with iron lids and doors are fixed at suitable points in all the alleys. They are both rat and fly proof, and help to minimise the fly nuisance. The former horse carts have been replaced by a small army of scavenging coolies with wheelbarrows who are able to pass practically anywhere. As a result of careful organisation the greater part of the daily mountain of house refuse is now actually a source of profit, being sold to country boatmen who buy it for agricultural purposes. It is, in fact, the cheapest manure available, the average selling price being 5 cents a ton. The cost of collection and disposal was 4½*d.* a ton, compared with 9*s.* the cost of London refuse. It is probable that the ensuing year may actually show a profit. The prevalence of tuberculosis remains at the same high level; it is the most fatal disease, among foreigners and Chinese alike, in Shanghai. A scheme is on foot for the establishment of a tuberculosis dispensary on lines of treatment which will be preventive, educative, and curative. Plague: During 1913, 13,333 rats were found dead, and of these 122 were plague infected, while nearly 153,000 rats were trapped and burnt. An active campaign of making houses rat proof is kept up, and in addition to 5875 houses dealt with in this way all food shops are now required to be rat proof as one of the conditions of licence. Nine cases of human plague with eight deaths occurred. It is considered that by these active rat-proofing measures a serious outbreak has been averted. Close on six million phosphorus baits were laid. Rabies: 41 persons underwent Pasteur antirabic treatment during the year, in 24 of which the animals responsible were proved rabid by inoculation. Two cases died subsequently from hydrophobia, one four days and the other ten days after the completion of treatment—i.e., before its effects were fully established. They had both been severely bitten. Dysentery: There was an increased prevalence of this disease during the latter part of summer. Most of the cases were amœbic in origin, and yielded to the new emetine treatment. Two deaths occurred from liver abscess among foreign residents. Bacillary dysentery was also noted.

Plague in South China.

The most rigorous regulations for the medical inspection of ships entering Shanghai from the South are at present being imposed. The outbreak of plague in Hong-Kong, serious though it is, is nothing like so dangerous to other ports as the epidemic in Canton. Bubonic plague with a high degree of virulence has been spreading over Kuangtung province, of which Canton is the capital, and the conditions there are very bad. The mortality approaches 100 per cent. The percentage of deaths from bubonic plague in South China has never been below 88·4. The plague return for the week ending May 19th in Hong-Kong shows that 241 cases were reported, and 185 deaths. For the past three weeks the number of cases of plague has exceeded those in any week for several years. In the previous week there were 215 cases and 173 deaths, while three weeks ago the returns were 203 reported cases, of which 171 were fatal. The total number of cases in Hong-Kong alone since the beginning of the year is 1474 and 1301 deaths. Since 1894, when the colony was first declared infected, each succeeding year has seen a recurrence of the disease, and since 1899 the heaviest death-rolls have been 1486 in 1899, 1651 in 1901, 1700 in 1912, and 1301 to May 19th in 1914. All these years the Hong-Kong Government has been strenuously endeavouring to eradicate plague, and leaves no stone unturned by means of its active and well-directed sanitary staff to limit infection. But a baffling feature with which the whole life of the colony is bound up is the constant coming and going of Chinese to and from the mainland in native craft, which are innumerable and very difficult to control.

The Rockefeller Foundation.

The trustees of this fund have long been interested in China, and especially in medical education in China, and this spring have sent a commission consisting of Mr. H. P. Judson, President of Chicago University, Dr. F. W. Peabody, of Boston, and Mr. R. S. Greene, United States Consul-General at Hankow, to make a study of the actual conditions surrounding medical education and report to the Foundation. This commission has been in Peking engaged in investigation, and has now left for the Yangtze Valley, where they will visit Hankow, Nanking, Changsha, Shanghai, and other important centres. The foundation is incorporated by the State of New York, and there is a sum of 100,000,000 gold dollars in the hands of the trustees, which by the terms of its charter is to be used "for the welfare of humanity." The members of the commission are examining very thoroughly into the actual amount of work done in each college with a view to the proper allotment of grants in aid, which is the form of help to be given, thus allowing existing institutions to select their own additional teachers and extend their equipment.

Medical Education in China.

At the present time a good deal of discussion is taking place in Far Eastern circles over the reported forward movement by Germany to establish her language and ideals in China to a much greater extent than has hitherto been the case. In Berlin the Reichstag in April, 1913, voted £1000 more than in former years for the establishment of German

educational centres in China, and a new German-China institute has been established to bring the scientific and technical achievements of Germany to the knowledge of the Chinese people. These aims will be effected especially by the establishment and maintenance of Sino-German schools, medical, technical, and commercial, and also Sino-German sanatoriums, and by supplying German teachers to Chinese schools. As far as medical schools are concerned there are now in Shanghai and Tsingtao two subsidised colleges where a five years' course of medicine is given, with German as the teaching medium. Both these colleges have preparatory schools attached, where a thorough grounding in that language can be made before entering on the medical course. Although the British Government has not yet seen its way to extend official financial support to the educational efforts of British medical missionaries, the movement, nevertheless, in conjunction with their American *confrères* is in a healthy condition. In fact, there is every reason to be proud of the splendid sustained efforts being made by medical missionaries to establish scientific medicine in China. In all large towns the work of foreign doctors and missionaries is gradually creating a demand on the part of the Chinese for more efficacious treatment than they can get from their native empirics. Two new colleges with hospitals attached have recently been opened. In Manchuria the Mukden Medical College, which owes its existence to the fine work of the veteran missionary Dr. Dugald Christie, C.M.G., has had an extension opened by the Governor of Fengtien, H.E. Chang Hsi Man. The college has 80 students, and in addition to a fairly good educational equipment offers excellent clinical teaching by means of its hospital, which last year dealt with 47,000 out-patient visits and 2380 operations. A new feature is an X ray department, a gift from General Chang Tso-lin, the commander of the army in Manchuria. At the last entrance examination 157 candidates came forward, of whom only 40 could be admitted. This is a healthy condition of things educationally, as it ensures a high standard in those who enter. The other institution, the Tsinan-fu Medical College, formed by a union of the English Baptist and American Presbyterian Missions, has just had the foundation stone of its new hospital laid by H.E. Chin, the Military Governor of Shantung Province. Friends in England, mainly by the exertion of Mr. Harold Balme, subscribed a sum of £6000 for the erection of the hospital which, in addition to a central administrative block and a large out-patient department, fitted with five consulting-rooms and two operating theatres, will have accommodation for 100 beds in modern wards. As a sign of advance in the times I might add that the Chinese Central Government has issued regulations officially permitting human anatomy and post-mortem examinations, and that this is no mere paper affair is shown by the fact that the Peking Union Medical College has received from the local prison authorities unclaimed bodies of dead prisoners for dissection.

Peking, May 27th.

DONATIONS AND BEQUESTS.—By will the late Mr. Francis James Trewent, of Hampstead, N.W., left £1000 to a London hospital for patients suffering from paralysis, and £1000 to the Hampstead General Hospital, Haverstock-hill.—Under the will of the late Mrs. Jane Pitt, of Ullswater, the Royal Infirmary, Liverpool, will receive £500 and the Carlisle Infirmary £250.

Correspondence.

"Audi alteram partem."

THE MENTAL DEFICIENCY ACT.

To the Editor of THE LANCET.

SIR,—It seems, from the remark of Mr. Wallace, K.C., and from the letter of Sir Bryan Donkin in THE LANCET of June 20th, that a person who is mentally deficient is not mentally deficient within the meaning of the Mental Deficiency Act unless his whole history from birth or from an early age can be had. I do not know whether this has been so held by any court of competent jurisdiction, but I venture to assert that it is not only calculated to nullify much of the benefit of the Act, and to remove out of its scope many of those who ought to be within it, and who were intended to be within it, but also that it is not a necessary interpretation of the Act, and that the Act may and ought to be so construed as to escape such a futile result. I am the more concerned to show this since I am largely responsible for the definitions in the Act, each of which requires that the persons defined shall have suffered from defect from an early age, and all but one require that he shall have suffered from birth.

From this it has been inferred, so it now seems, that unless the whole career of the person is known, and his defect can be traced back in his history to an early age or to birth, the definition is not satisfied. The contention seems to me absurd. Take the frequent case of a person who suffers from congenital hemiplegia, with contracture, infantile undevelopment, and choreiform spasm of one arm and leg. The state of the limbs renders it certain on inspection of them that the physical deficiency dates from birth or from an early age; and no information from the mother, no written record of the person's history, could possibly increase our certainty that it does so date. The nature of the bodily deformity and deficiency is itself conclusive of its own inveteracy, and its existence from birth or from an early age; and so it is with many cases of deformity and deficiency of mind. When we observe certain mental defects we know at once, without investigating the history of the patient, that these defects have existed from birth or from an early age, and we no more need to investigate the history in order to determine the point, than we need to investigate the history of a red-haired person in order to determine whether the redness of his hair existed from birth or from an early age, or whether it was not brought on by profligacy and evil living.

If we can say that a person is mentally deficient, and that the deficiency is of a kind that we know by experience is inveterate, and is part of the original equipment of that person, then I maintain he is mentally deficient within the meaning of the Mental Deficiency Act.

I am, Sir, yours faithfully,

June 25th, 1914. CHAS. A. MERCIER.

THE SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

To the Editor of THE LANCET.

SIR,—I have just received a circular from the Society of Members of the Royal College of Surgeons of England asking me to vote for certain candidates—a rather belated request—at the election to the Council on Thursday next. This request

is based upon the fact that these candidates have pledged themselves if elected to support the claims of the Members for an active participation in the government of the College. The circular also includes the following remarkable paragraph: "To govern a great college there is needed a body of men of wide and comprehensive intelligence. To secure a council of such men we must *avoid those persons whose only idea is to glorify their own existence and to remain deaf to all suggestions for improving the College administration* [the italics are mine], and who refuse to adopt the only course which will help to make the College of Surgeons a real power for inspiring surgical knowledge and for protecting and guarding surgical practitioners."

Could anything have been conceived in worse taste, more impolitic, or more harmful to the Members' cause than this virulent expression of feeling? There is a flavour about it of the militant tactics of those insane women known as suffragettes. It has always been the policy of the Members' association to pour vials of vituperation upon the Council. Surely, the past has shown unequivocally the worthlessness of the proceeding. What has been gained by this policy? Nothing save, perhaps, the alienation of many Fellows who otherwise, at least in part, would be willing to show active sympathy with the Members and their claims. When will the Society of Members realise that to proceed on strictly constitutional lines is the only means by which the Members can hope to gain adherents to their cause among the Fellows? Meanwhile this last ebullition of feeling against the Council will only have the effect of destroying the chances of success of those candidates for whom the Society of Members have appealed for votes.

I am, Sir, yours faithfully,

Wimpole-street, W., June 29th, 1914. PERCY DUNN.

SOME POINTS IN THE MANAGEMENT OF TRACHOMA.

To the Editor of THE LANCET.

SIR,—It may be of interest to record certain experiences in connexion with the management of trachoma in the Poor-law schools under the administration of the Westminster Diocesan Education Fund.

The authorities of the fund have two methods of dealing with this disease: (1) inspection, and (2) isolation in special schools. Under the first head 13 schools are inspected twice a year, and approximately 2200 children examined. The lids of every child are everted with a view to detecting any cases of trachoma or contagious ophthalmia. Any case of trachoma is drafted off to a special school for isolation and treatment. It is difficult to arrive at the percentage of trachoma in Poor-law schools, but I am convinced that a periodical and systematic inspection has a very marked effect in keeping down the number of trachoma cases. Stephenson's census, taken in 1896, when 13,047 children were inspected, gives a percentage of 4·91 trachoma cases. In my last inspection (I found approximately ½ per cent. of the children had trachoma on the previous inspection) I found 22 cases of trachoma—i.e., 1 per cent. Six of these cases were found in one school where there had previously been trachoma, and seven were found in one of the smaller schools, and had nearly all been admitted within the last few months. I may add that the children of these schools are drawn from the very poorest class, and a large percentage are of Irish parentage.

Secondly, with regard to ophthalmic isolation schools, the fund has such schools, one for girls and one for boys, at Chigwell. In the latter school I had last year on an average 240 boys under my care. One difficulty which may from time to time confront the surgeon in charge of such a school is a sudden inroad of cases, which the ordinary accommodation is not sufficient to meet. Such a situation arose at Chigwell on three occasions—namely, the summers of 1910, 1911, and 1912. In each year I had a number of boys put under canvas. The spot selected was a sloping field adjoining the school. The soil was gravel and the aspect west. In 1910 and 1911 30 cases were dealt with in this way. The tents were of the ordinary army bell-tent pattern, with boards. Six boys slept in each tent. There was a man in charge at night, whose duty it was also to see that the bedding was folded and the flies of the tents rolled up in the daytime. There was a lavatory adjacent to the tents, where the boys washed in running water and had access to the spray bath, as did the boys in the school buildings. Each boy had his numbered towel, &c. There was sufficient accommodation in the school for all the boys to attend classes, receive treatment, and have meals together.

In 1912 the numbers under canvas varied from a minimum of 100 to 120. This large increase was due to the fact that 87 boys had to be admitted in one month. The boys were accommodated in two large marquees. No boards were employed, but each boy had a mackintosh sheet under his bedding. A small gutter was cut round the higher side of the tent to carry off water. This year the boys were out from July to the end of October. It is interesting to recall that 1910 was a fairly average summer, 1911 was the year of drought, and 1912 was equally exceptional in the opposite respect. The type of season does not seem to have affected the welfare of the boys. In no year was it necessary to bring any boy in on account of rheumatism or chill. In 1912 there was scarlet fever in the school. Three or four of the boys under canvas became affected, and were, of course, removed to a fever hospital. In 1912 record was kept of the weights of the boys before and after their open-air sojourn. They all increased in weight except one boy, whose weight remained the same. The average increase was 7 to 8 lb. in the four months. One boy increased 28 lb.

On the whole, this method of putting the boys under canvas proved itself a very effective way of dealing with a sudden outbreak of the disease during the summer months. Stephenson, in "Epidemic Ophthalmia," p. 61, suggests that this method might be used, the tents being pitched upon a wooden or asphalt flooring. He cites two instances of epidemics having been treated in this way—namely, at the St. Petersburg Military Hospital in 1835 and 1839, under Florio, and in 1872 at the St. Stanislaus Asylum, Nancy. Boldt, in his book on trachoma, states "that if an epidemic of trachoma broke out at the seat of war, where there was satisfactory accommodation," he "would consider it imperative to treat the milder cases in tents or portable barracks, such as are, indeed, ordered for use in the treatment of epidemics on active service."

In order to meet any further epidemic the managers of the school at Chigwell have erected so-called "temporary" buildings to accommodate

120 boys in the same field where the tents were pitched. They consist of dormitories, class-rooms, lavatory, and recreation-room. The general construction is, first, cement concrete under the whole of the buildings, and then brickwork foundation walls with a superstructure of timber framing, covered externally with corrugated galvanised sheeting, and lined and ceiled internally with sheets of asbestos set out in panels and painted or distempered. The heating is by means of slow combustion stoves.

Of more special interest are the class-rooms and lavatory. There are four class-rooms, each for 25 scholars (existing class-rooms were able to accommodate the balance of the 120 boys). These are exceptionally well-lighted and cross ventilated, the windows being of a special design (suggested by Dr. Ralph Crowley). The rooms are well warmed by open fires, and large double doors open outwards at ground level, permitting if desired of readily removing the classes to the open playing fields outside. The lavatory building was of experimental and original design, specially constructed with the object of the rapid washing and bathing of the 120 boys, and has proved very successful. The boys enter from the outside straight into the dressing room. Here they strip, then pass under a warm shower into the washing room, which is provided with 40 warm sprays, each having racks for soap and a nail-brush and for three numbered toothbrushes. After washing in this room the boys pass under first a warm and then a cold shower, and into the drying room, fitted with racks for 120 towels and hair-brushes, and then again into the dressing room. The floor of this building is so constructed that it can be readily washed down with buckets of water or a hose-pipe. The attendant who has charge of the washing arrangements informs me that he is able to deal with 100 boys in 45 minutes in this way.

I am indebted to Messrs. Best and Sons, of Victoria-street, for the particulars and plans of the temporary buildings.

I am, Sir, yours faithfully,

J. F. CUNNINGHAM, F.R.C.S.Eng.

Weymouth-street, W., June 30th, 1914.

COLOURED CHLOROFORM AND ETHER.

To the Editor of THE LANCET.

SIR,—There are definite dangers due to the fact that chloroform and ether are similar in appearance and only to be distinguished by their weight and smell. Now so much ether is given by the open method different coloured drop bottles are sometimes used, but that does not prevent chloroform being put into the ether drop bottle by mistake. The greatest danger of all is when chloroform has been by mistake put into a Clover's inhaler. I have heard of two fatal accidents from this, and almost witnessed a third myself. The profession has become accustomed to coloured antiseptics; and provided the colouring reagents are absolutely innocuous to the patient, are permanent, and do not affect the properties of the chloroform and ether, there are many things to be said in their favour in the case of anæsthetics.

At my suggestion, after some months of experimenting, Messrs. Duncan and Flockhart have succeeded in producing a pink chloroform and a green ether, which are perfectly satisfactory and which they are now prepared to dispense if they are asked for them. The mixture of equal parts shows a clear brown. I have exposed them to sunlight for some weeks without them fading, and used them frequently with perfectly satisfactory results. I gave the ether by the open method for over two hours a few days ago, using the same piece of lint, and found it perfectly satisfactory, and have found the pink chloroform equally good.

Mistaking chloroform for ether probably never occurs in hospitals or in the practice of the professional anæsthetist, but surely such a mistake ought to be made absolutely impossible. At times anæsthetics are given in a bad light with indifferent assistants and for an exacting surgeon, who is inclined to flurry the anæsthetist. The green used for the ether is a pure vegetable product, 1 in 1400; the red in the chloroform is an aniline product, 1 in 200,000.—I am, Sir, yours faithfully,

P. F. BARTON, M.A., M.B.Cantab.

Wimbledon, June 25th, 1914.

ORAL SEPSIS.

To the Editor of THE LANCET.

SIR,—Dr. Robert Hutchison in his reply to Dr. Sim Wallace in THE LANCET of June 13th (p. 1721), suggests, as a small contribution to a discussion on "oral sepsis," that the pathological consequences of oral sepsis tend at present "to be greatly exaggerated." I am glad to notice that Dr. Hutchison is careful on this occasion only to make a suggestion, and that he has not, in his usual refreshing though rather dogmatic manner, made a definite assertion. May I also make a small contribution to this discussion?

During last season, as one of the physicians to the Royal Bath Hospital, I had under my care 261 cases, which I classified under the following groups: Chronic arthritis, muscular rheumatism or fibrositis, subacute rheumatism, neuritis, skin diseases, and miscellaneous.

The cases of chronic arthritis I attempted to subdivide into the following: Proliferative polyarticular or infective arthritis; degenerative or osteo-arthritis; articular gout; true rheumatoid arthritis, or metabolic osteo-arthritis (Nathan); chronic villous arthritis; and unclassified cases. Now in all these cases I carefully examined the mouth for evidence of oral sepsis, such as decayed teeth, swollen and inflamed gums, pyorrhœa and septic conditions of the tonsils. The arrangements at the hospital at present do not permit of bacteriological examinations, but the evidence of even such perfunctory examination as I carried out is worthy, I think, of Dr. Hutchison's attention. The percentage of oral sepsis in these cases may be seen from the following table:—

	Number of cases.	Oral sepsis.
Chronic arthritis:—		
1. Proliferative polyarticular arthritis	56	38
2. Degenerative or osteo-arthritis	42	10
3. Articular gout	5	1
4. Rheumatoid arthritis, or metabolic osteo-arthritis	3	None.
5. Chronic villous arthritis	9	2
6. Unclassified cases of arthritis	10	5
Muscular rheumatism or fibrositis	56	13
Subacute rheumatism	15	6
Neuritis	19	3
Skin diseases	36	2
Miscellaneous	10	3

Thus we see that out of a total of 261 cases admitted 83 suffered from some form of oral sepsis, and what is particularly noteworthy and almost startling is the fact that in the subdivision proliferative polyarticular, which we recognise as

infective, 67 per cent. had oral sepsis. I do not wish for a moment to deny that there were not other forms of sepsis present, such as leucorrhœa, gonorrhœa, but the percentage of these was small in comparison.

I feel convinced that if the general practitioner would send these cases to the dentist when they first come under his notice instead of dosing them with salicylates and aspirin, we should soon see fewer of these distressing cases of severe crippling which are so common at all our spas, but the cases must be seen early and before the damage is done.

I am, Sir, yours faithfully,

Harrogate, June 20th, 1914. G. L. KERR PRINGLE.

INTRACRANIAL INJECTIONS OF SALVARSANISED SERUM IN PARENCHYMATOUS SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.

To the Editor of THE LANCET.

SIR,—I have read with great interest the article in THE LANCET of May 30th written by Mr. Ballance on the introduction of salvarsanised serum into the lateral ventricle, and I am much impressed with this ingenious method. I understand, however, that Mr. Ballance would consider an injection into the subdural space over the hemisphere of at least equal value, and that he has given this method up only because he found it was difficult to inject a sufficient quantity of serum into the subdural space. Now I have myself in a few cases of general paralysis (six cases up to now) injected salvarsanised serum intracranially, and my experience is that it is not only possible but very easy to introduce as much as 30 c.c. in the subdural space without any subsequent leaking out of the injected fluid.

I shall as briefly as possible describe the method I have employed. With a ½-inch trephine I make an opening in the skull about 10 cm. above the anterior end of the left zygomatic arch, just behind the border of the hair. I then puncture the dura obliquely with a fine hollow needle, and when the cerebro-spinal fluid trickles out I fix a record syringe on to the needle and inject slowly 30 c.c. I then raise the patient to a sitting position and stitch up the wound. I do it all with local anæsthesia. It will generally be sufficient to inject about 5 c.c. of a 1 per cent. solution of novocaine in the soft parts that cover the skull. One only needs a small flap for the trephining. The bone itself is insensitive. Half an hour before the operation I give ¼ gr. morphia hypodermically, and I regard this as essential in order to keep the patient quiet during the operation. When the patient, after the injection, is raised to the sitting position it will generally be found that there is no leakage worth mentioning. I leave the trephine aperture open for subsequent injections, and it has proved to be very easy to puncture again through the old trephine opening; one has only carefully and slowly to push the needle in till the cerebro-spinal fluid trickles out, and then inject.

I do not think it necessary to remove any cerebro-spinal fluid before the injection; at least, I have not had any pressure phenomena after the injections and I have never removed more than 2–5 c.c. cerebro-spinal fluid before injecting. In the accompanying diagram I have tried roughly to indicate the localisation of the flap and the trephine opening. I suppose one might equally well trephine on the right side (in a case of left opileptiform attacks this would probably be preferable) or on any other part of the convexity of the skull; only I have chosen this site for trephining because of the situation of the eupractic regions on the left side and chiefly because of the ease with which trephining can be performed in this region. There is no muscular cover, one is well in front of the anterior branch of the meningeal artery, and also at a safe distance from the sinus sagittalis superior. The skull is rather thick in this region, which is an advantage, as one wants to leave the trephining aperture open for subsequent injections.

I think that this method has several advantages over the intraventricular injection. In the first place it is a much easier operation, and does not require any great surgical skill. Secondly, there is reason to believe that the injected fluid by subdural injection obtains a more direct access to the cerebral cortex than it does by the intraventricular injections.

Diagram to show situation of flap and trephine opening.

As far as one can judge from Dr. Golla's experiments (as quoted by Dr. Harry Campbell in his very interesting article in THE LANCET of May 30th), a fluid injected subdurally will readily gain access to the subarachnoid space and the cortex of the brain—and as far as one can judge it will arrive at the cortex in a much less diluted and attenuated form than by intraventricular injection.

It is true one injects rather a small dose of salvarsan by injecting only 30 c.c. serum. After an intravenous injection of 0·6 grm. neosalvarsan (the dose I have generally used) one may say that the blood contains about 0·1 per 1000 neosalvarsan (the entire quantity of blood being about 6 litres), 30 c.c. will consequently only contain 3 mgrm. neosalvarsan, and it seems rational to add more neosalvarsan to the serum. How much one ought to add remains yet to be found out.

Personally I have never added any. Too short a time has elapsed to speak about the results. One thing has always to be borne in mind. Even if one kills ever so many spirochætæ, one cannot create one single new neuron. One may possibly expect a sort of regeneration of neurons which are only slightly damaged, but to expect any great improvement in the objective condition in general paralysis and tabes would be absurd. This new treatment with

salvarsanised serum may possibly be able to stop the progress of the disease. Much more than that must not be expected, and therefore early diagnosis is more important than anything else. One must try to stop the disease whilst the patient is still an individual of fairly full value.

I should like to record my best thanks to the members of the honorary medical staff of the hospital for giving me the opportunity of performing these intracranial injections.

I am, Sir, yours faithfully,

G. H. MONRAD-KROHN, M.B., M.R.C.P. Lond., M.R.C.S.,
Resident Medical Officer, Hospital for Epilepsy and Paralysis, Maida Vale, W.

June 6th, 1914.

EVACUATION OF ASCITIC FLUID THROUGH A SLENDER CANNULA.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 27th, p. 1831, you mention that Dr. Buth, of Berlin, advocates tapping in ascites with a small cannula. In the second edition of my "Therapeutics of the Circulation," published three months ago, I have fully described the advantages of this process and the method of performing it. Dr. Buth's method seems exactly the same as mine, and I have described some additional precautions which I think will be useful in cases where the medical man is obliged to leave the patient for some hours.

I am, Sir, yours faithfully,

Stratford-place, W., June 29th, 1914. LAUDER BRUNTON.

THE NATIONAL MEDICAL UNION.

To the Editor of THE LANCET.

SIR,—The annual meeting of the National Medical Union took place on June 27th and the dinner followed in the evening.

The representative of THE LANCET, returning thanks for the toast of "The Press," made the remark that the value of such a union depended on unity and numbers. The membership of the union now extends to some hundreds, but to make it a success and a real force in the land it will have to increase to thousands. The principal resolution at the meeting—"That refusal of service in any capacity under the existing National Insurance Acts, 1911 and 1913, be incorporated as a primary principle in the policy of the National Medical Union"—was carried by a large majority, and it was pointed out during the meeting that there were 15,000 non-panel men in the country and 14,000 panel. It was also pointed out that in London only about 1400 men were on the panel out of 6600 names on the Medical Register, and I am informed that even those small numbers are decreased each month by about half a dozen.

A most important resolution was carried *nem. con.* to the effect that either a full-time manager or a part-time officer should be engaged at a salary to put some new life into the union, and it would depend on the guarantee fund which it would be. The fund is not very well supported, and the matter seems to me so important that I will increase my guarantee by 50 per cent. if any other man will do the same.

May I appeal to every non-panel man in the country to join at once this non-panel union? They may be tired of medical politics, but it seems to me that if the profession is not to sink to the level of "underpaid artisans" (your Commissioner for dealing with the working of the Act has stated that this was the remark made to him by a German doctor about the state of the panel men in that country) it is necessary to work for the freedom of the profession and the public; and we can only do this by union and number. But to attempt to unite panel and non-panel men is to my mind hopeless.

I am, Sir, yours faithfully,

Streatham, S.W., June 29th, 1914. E. H. WORTH.

TOUCHING FOR THE KING'S EVIL.

To the Editor of THE LANCET.

SIR,—The "IAC. 8" touch-piece, to which Dr. F. Parkes Weber alludes in his letter in THE LANCET of June 27th, was among those in the recently dispersed Hodgkin collection. I would suggest that it was struck for use in Scotland, perhaps during the 1715 campaign; otherwise it is hard to see why the Old Pretender should prefer to masquerade as James VIII. of Scotland rather than as James III. of England. I am, Sir, yours faithfully,

London, June 27th, 1914. RAYMOND CRAWFURD.

THE MEDICAL DEFENCE UNION.

To the Editor of THE LANCET.

SIR,—Having been a member of the Medical Defence Union some 28 years I venture to make some suggestions for the improvement both of the efficiency of the organisation and of the position of the members.

1. That an annual meeting of members be held at which it shall be competent for any member to bring forward motions or to ask questions, and generally discuss the business of the Union transacted during the year under consideration.

2. That an official shorthand reporter shall be present at such meeting aforesaid, and that the usual attendance book shall be signed by members before entering the meeting.

3. That an official report of the proceedings of the same shall be printed and circulated to all members.

4. That the president and council of the Union be elected at the annual meeting in question, the members of council and the ordinary members having equality both in nomination and vote. That the election be by ballot, nomination papers being previously circulated.

I am, Sir, yours faithfully,

London, June 23rd, 1914. DENNIS VINRACE.

ULTRAMICROSCOPIC VIRUS.

To the Editor of THE LANCET.

SIR,—In an annotation on the Etiology of Mumps in THE LANCET of June 27th, p. 1832, the following sentence occurs: "The investigation affords evidence that mumps is due to an ultramicroscopic virus comparable to that of poliomyelitis."

If the virus is purely chemical in nature it might be ultramicroscopic, but I have always contended that if the virus is due to the growth of a bacterial organism it matters not how minute the individual organisms may be, when they grow, as all bacteria do, in colonies composed of myriads of individuals, such colonies should be easily detected by the microscope. This has been my consistent attitude

with regard to the virus, for instance, of poliomyelitis mentioned in the sentence quoted above. Has not Flexner[1] (with the assistance of Noguchi and others at the Rockefeller Institute, New York) succeeded in cultivating and identifying the virus (micro-organism) of poliomyelitis? This has been accomplished on lines similar to that devised by Noguchi for the cultivation of spirochetæ. Two cultivating media are used, and in the second minute colonies are visible, even to the naked eye, clouding the medium. Under the microscope a globular organism is found in pairs, chains, or clusters. We are further informed that by Giemsa's stain the organism can also be demonstrated in infected tissues. The disease has been reproduced experimentally in monkeys.

When once a suitable medium for cultivation and a suitable stain have been discovered, a cultivable organism should in time be recognised, in colonies at any rate.

I am, Sir, yours faithfully,

Norwich, June 26th, 1914. J. T. C. NASH.

AN EXPLANATION.

To the Editor of THE LANCET.

SIR,—In the course of a speech made by me at Leeds in November last and in the press correspondence which ensued thereon in which I dealt with the Insurance Act and the method in which it was being carried out by the medical profession, I felt it my duty to call attention to the conduct of certain doctors in Yorkshire.

It has been pointed out to me that the words I used have been interpreted by certain persons as casting a reflection upon Dr. Walker and Dr. Erhardt of Crosshills, near Keighley, and I willingly take this opportunity of stating that I did not make, and never intended to make, any imputation upon either of these gentlemen.

I would further wish to state that there is, so far as I am aware, no cause for complaint against either of these two gentlemen, who are carrying out the Act loyally and honestly, and I would desire to express sincere regret that any words of mine could possibly have been thought to be applicable to them.—I am, Sir, yours faithfully.

F. HANDEL BOOTH,
Chairman of the Council of the Faculty of Insurance.

London, W.C., July 1st, 1914.

*** We are glad to publish Mr. Handel Booth's expression of regret, and hope that he will be more careful of his words in the future.—ED. L.

[1] Journal of the American Medical Association, 1913, vol. i., p. 362.

ILFORD AND ITS LATE MEDICAL OFFICER OF HEALTH.—On June 23rd a representative gathering of local medical practitioners took place in the Seven Kings Hotel, Ilford, under the auspices of the Ilford Medical Society. Mr. C. F. H. Stovin was the guest of honour. Mr. H. E. Watts, the President, occupied the chair, and in proposing "Long life, happiness, and properity to our late medical officer of health, Mr. Stovin," spoke of the cordial relations which had always existed between the medical officer of health and the general practitioners in the district, of their great appreciation of his services in the interests of the public health of the parish, and of their genuine regret that circumstances had arisen which necessitated his leaving them. Mr. G. N. P. Carrell, the senior practitioner present, supported the toast. The President then presented Mr. Stovin, on behalf of the society, with a silver salver suitably inscribed with words of appreciation from 36 of Mr. Stovin's professional brethren in the district. Mr. Stovin, after acknowledging the gift, proposed the toast of "The Ilford Medical Society," and the honorary secretary, Mr. Percy J. Drought, replied.

THE NATIONAL INSURANCE ACT.

PROPRIETARY MEDICINES AND THE INSURANCE ACT.

IT is to be observed that a falling off in the sale of the inland revenue stamps applied to proprietary or so-called "patent" medicines, which was stated by Mr. Lloyd George to have taken place and was attributed to the Insurance Act, has not been maintained. The Chancellor of the Exchequer at the same time (in connexion with last year's Budget) spoke of the evidence given before the Select Committee on Proprietary Medicines as a contributing cause of the decline in the trade referred to. Be this as it may, the sale of stamps during the financial year which ended on March 31st was the largest hitherto known, amounting to £360,376, an increase of £32,000 upon the figures of 1912–13. At the same time, however, the rise in the number of licences for the retail sale of these articles has increased but little, and there is no evidence of any connexion between the increased sale of articles to which stamps must be applied and the working of the National Insurance Act. As to this, it seems possible that insured patients, who have before not consulted a medical man, may have done so, and having obtained from him information as to what they are suffering from described in general terms, may have been tempted to make use of such knowledge in order to doctor themselves with advertised "cures" and "remedies"—a regrettable and dangerous course. This seems to be a reasonable explanation, if there is such an increase as that referred to in the sale of preparations strictly of a medicinal character. At the same time it would be interesting to know whether there has not been also a rather marked increase in the sale of proprietary articles which would not take the place of medicines prescribed to insured persons, but which nevertheless are sold under stamps. It may be suggested, for example, that attention drawn to the necessity for taking care of the teeth has caused a large increase in the advertisement, and presumably in the sale of proprietary dental preparations.

HOSPITALS AND THE INSURANCE ACT.

At the fifth annual conference of the British Hospitals Association, held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, Dr. G. H. Hume, vice-president of the infirmary, initiated an interesting discussion in a speech which had for its subject "The Voluntary Hospital on its Trial." Dr. Hume spoke of the Insurance Act as responsible for much of the increased pressure upon the voluntary hospitals, in that it might not unfairly be said to provide treatment mainly for trivial cases and to leave the serious cases to be dealt with at the hospitals, and that it also was having its effect in precipitating the change of mutual attitude of givers and recipients. There was a growing reluctance to give, and on the part of the working-classes when they were contributors there was a growing unwillingness, if they became in-patients, to pay anything further for their treatment. Insured persons, again, believed that they had a right to have hospital treatment free, which at least was intelligible. He considered that hospitals had a claim for provision towards their expenses to be brought about by an amending Act. He suggested the division of the country into hospital areas, each with at least one

institution of the first rank, and that these should be under a hospital authority so far as they were maintained by public money. He would have the necessary funds raised by county and borough rates with a Government subvention. Mr. W. G. Carnt, in commenting upon this, assured the meeting that the voluntary system was not a failure at Manchester, where he is superintendent of the Royal Infirmary. He deprecated any departure from the voluntary system. Sir Henry Burdett gave strong support to the maintenance of the voluntary system which, he declared, no Chancellor of the Exchequer alive would ever be strong enough to destroy. He compared the resulting attitude towards the patient under the voluntary system with that obtaining abroad, and declared that he would rather die than live in a country where they had State hospitals. State-aid had always meant that the professor dominated and that humanity suffered, while the one great blessing of the voluntary system was that the first consideration was the patient. Dr. D. J. Mackintosh, speaking of the Western Infirmary, Glasgow, mentioned a falling off there of £123 in the first year under the Act, owing to refusals by insured working men to continue contributing. New subscriptions, however, due to ship-building prosperity had more than made up for this.

THE NATIONAL MEDICAL UNION.

On Saturday, June 27th, there was a well-attended meeting of the National Medical Union, and in the evening a banquet was given at the Café Monico, when a larger concourse of members assembled. Mr. V. T. Greenyer, of Brighton, as chairman of the council of the Union, presided at the dinner, and after the usual loyal toasts Dr. John Playfair, representing the Edinburgh Medical Guild, proposed the toast of the evening, "The National Medical Union." It had originated, he said, at Manchester in 1912 as a local body, but in the course of time and with the help of the honorary secretary, Mr. Robert Carswell, the Manchester Society had united with the Edinburgh Medical Guild and the London non-panel medical societies. The Union thus became, he said, "a central federation of the forces organised to resist the panel and uphold the best traditions of the profession." Alluding to the feeling of the medical profession against the Act, he said that he was agreeably surprised to find that the majority of medical men were not on the panel. In England 11,820 practitioners were on the panel, but 12,976 had refused to join. In Scotland 2151 were not on and 1756 were on the panel. Taking England, Scotland, and Wales together there were 15,663 non-panel and 14,472 panel doctors. Out of 15,000 doctors it should be easy for the Union to recruit a few thousand more members. Dr. Porter and Dr. James Smith, while they pleaded for the cause of individualism, which they said the Insurance Act had sacrificed, also advocated the formation of a strong, well-disciplined Union. Dr. J. Brassey Brierley said that the National Medical Union had come to stay, their members were increasing, and when the time was ripe for a general reconstruction in medical politics the Government would come to them for help. The chairman thought the fact that so many panel doctors felt the necessity of forming themselves into a strong trade union indicated that the Act was not working satisfactorily. Dr. F. J. Smith responded for "The Guests." As a teacher of medicine he thought the Act was doing harm, for though the minority of the panel doctors were doing their best, medical practice was degenerating into a mere money-making business—"profession be damned, I can earn £1000 a year by having 3000 insured persons on my list," was his way of illustrating this phase, adding, "panel practice is a short cut to £400 or £500 a year by asking a given number of people what is the matter with them and giving them prescriptions in duplicate." Dr. Smith was convinced that a large number of panel doctors did not do their work properly, and thought that the medical student, with such examples before him, would learn as little as possible, and ask why he should do more when he could earn a good living without doing it. The banquet concluded with the toast of "The Press," to which Mr. Adolphe Smith, as representing THE LANCET, responded. He referred to the fact that during the last 12 months he had visited places all over the kingdom and interviewed pro-panel and anti-panel practitioners in all centres, and had been received with equal urbanity by either while studying the existing conditions.

ELECTION OF MEDICAL REPRESENTATIVES UPON THE LONDON INSURANCE COMMITTEE.

Ballot papers for the election of medical representatives to serve upon the London Insurance Committee have now been issued to medical practitioners in the County of London by the National Insurance Commission. The election will be carried out according to the system of proportional representation. The following are the duly nominated candidates whose names appear upon the ballot papers, which when filled in must reach the returning officer, 29, Queen Anne's-gate, London, S.W., not later than 12 noon on Monday next, July 6th: R. V. Donnellan, L.R.C.S., Lewisham Park, S.E.; Major Greenwood, M.D., Hackney-road, N.E.; D. Barty King, M.D., Devonshire-street, W.; W. H. F. Oxley, M.R.C.S., East India Dock-road, E.; and Alfred Welply, M.D., Seven Sisters-road, N.

PROVISION OF SHELTERS IN LONDON.

The London Insurance Committee informs the borough councils that the Local Government Board is prepared to make grants towards the cost of providing shelters for the treatment of consumptive patients in the backyards attached to their homes.

WE are asked to state that the successful action of Dr. Alfred Salter against the London Insurance Committee, recorded in our last issue, was carried out on his behalf by the Medical Defence Union.

THE CLINICAL CONGRESS OF SURGEONS.—Mr. A. H. Tubby, for the Royal National Orthopædic Hospital, and Mr. Stephen Mayou, for the Central London Ophthalmic Hospital, have joined the general committee.

THE President and Council of the Royal Society have accepted the offer of Miss L. E. and Miss M. W. Lawrence to present £4000 to the society in trust to devote the interest arising therefrom to the furtherance of research into the cause and cure of disease in man and animals. The donors desire to associate the gift with the memory of their father, Sir William Lawrence, F.R.S., surgeon to St. Bartholomew's Hospital, and their brother Sir Trevor Lawrence, K.C.V.O., treasurer of St. Bartholomew's Hospital.

Medical News.

UNIVERSITY OF OXFORD.—In the undermentioned examinations the following candidates were approved :—

FIRST B.M. EXAMINATION.

Organic Chemistry.—J. P. B. Harold, P. S. Houghton, J. E. B. Morton, M. E. Shaw, G. K. Stone, and W. F. Skaife.

Human Anatomy and Human Physiology.—C. W. W. Armstrong, G. Cranstoun, J. L. Dunstan, C. K. J. Hamilton, J. F. Haines, R. M. Humphreys, R. W. Lush, B. G. v. B. Mellé, D. H. Skinner, A. E. Thomas, K. F. D. Waters, and C. D. Wood.

SECOND B.M. EXAMINATION.

Materia Medica and Pharmacology.—H. E. A. Boldero, C. J. A. Buckell, R. W. J. A. Cushing, S. C. Dyke, H. S. Jeffries, C. P. Sells, and C. F. Symonds.

Pathology.—A. C. Ballance, H. E. Bamber, J. B. Batt, H. E. A. Boldero, L. G. Brown, C. J. A. Buckell, C. H. Carlton, F. B. Chavasse, G. Cranstoun, A. W. Dennis, S. C. Dyke, K. M. Dyott, O. H. Gotch, C. H. L. Harper, H. M. Oddy, O. G. Parry-Jones, O. B. Pratt, G. P. Selby, S. W. F. Underhill, H. St. H. Vertue, A. L. Watts, and H. A. B. Whitelocke.

Forensic Medicine and Public Health.—C. H. Carlton, V. T. Ellwood, F. C. Gladstone, C. H. L. Harper, C. W. B. Littlejohn, G. A. Maling, E. E. Mather, O. G. Parry-Jones, M. O. Raven, G. S. Robinson, and G. P. Selby.

Medicine, Surgery, and Midwifery.—J. C. Davies, C. Dean, A. W. Dennis, C. W. B. Littlejohn, E. E. Mather, H. M. Pope, M. O. Raven, G. P. Selby, and A. B. Thompson.

DIPLOMA IN PUBLIC HEALTH.

Part I.—F. S. Carson, G. M. Cogswell, H. B. Gibbins, W. H. Hewlett, J. Inkster, C. P. B. Kebbell, F. J. H. Martin, L. M. Mayers, R. S. Miller, H. W. Parnis, W. R. S. Roberts, and A. H. Savage.

Part II.—N. A. Coward, H. B. Gibbins, W. Gilmour, J. Inkster, F. J. H. Martin, J. Powell, E. L. N. Rhodes, W. R. S. Roberts, and A. H. Savage.

UNIVERSITY OF SHEFFIELD: FACULTY OF MEDICINE.—The following are the results of examinations held recently :—

First Examination for the M.B., Ch.B. Degrees.—James N. Gale, John V. Mainprize, Robert H. B. Mathews, John Ryan, Alice White, and Ethel White.

Second Examination for the M.B., Ch.B. Degrees.—Mary Andrews, Frederick G. B. Hill, and Florence B. Millard.

M.B., Ch.B. Final Examination.—Part B, completing examination: William B. Allen (Second Class Honours), Gordon F. Stones, Josiah R. Turner, Derwent C. Turnbull, and Charles H. Wilson.

Diploma in Public Health.—John R. McGregor, Ernest T. K. Walker, and Percival D. Warburton.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the Convocation on June 23rd the following degrees were conferred :—

Doctor of Medicine.—James Kenworthy Johnston Haworth, Eva Lumb, and Ralph Stuart Renton.

Doctor of Medicine for Practitioners of Fifteen Years' Standing.—William Oliver Beddard, William Horton Date, John Flynn, Alfred John Hesterlow, William Massingherd Middleton Jackson, James Ryan McPerran, Edwin Maynard, and John Jesudasen Srinavasagam Pillay.

Master of Surgery (M.S.).—Joseph Jopling Brown and James Carruthers Young.

Bachelor of Medicine (M.B.).—Cyril Armstrong and Ishmael Gustavus Cummings, College of Medicine, Newcastle-upon-Tyne; Henry Hawes Elliot, Guy's Hospital; Charles Norman Gover, Frank Wilson Harlow, Maurice Henry de Jersey Harper, and Cyril Jacobs, College of Medicine, Newcastle-upon-Tyne; Hubert Vere Leigh, Guy's Hospital; Francis Metcalfe, College of Medicine, Newcastle-upon-Tyne; Eric Knowles Ryan, University of Sheffield; and Herbert Joseph Shanley, Kirton Ivor Seager Smith, and James Calvert Spence, College of Medicine, Newcastle-upon-Tyne.

Bachelor of Surgery (B.S.).—Cyril Armstrong and Ishmael Gustavus Cummings, College of Medicine, Newcastle-upon-Tyne; Henry Hawes Elliot, Guy's Hospital; Idris David Evans, Charles Norman Gover, Frank Wilson Harlow, Maurice Henry de Jersey Harper, and Cyril Jacobs, College of Medicine, Newcastle-upon-Tyne; Hubert Vere Leigh, Guy's Hospital; and Francis Metcalfe, Herbert Joseph Shanley, Kirton Ivor Seager Smith, and James Calvert Spence, College of Medicine, Newcastle-upon-Tyne.

Bachelor of Hygiene (B.Hy.).—Arthur Hyde Wear and Stanley Worthington.

The following received the Diploma in Public Health (D.P.H.) :—

Arthur Hyde Wear and Stanley Worthington.

The following received the Licence in Dental Surgery (L.D.S) :—

John Thomas Smith and Sidney Wilkinson, College of Medicine, Newcastle-upon-Tyne.

At the Second Examination for the degree of Bachelor of Medicine, the following candidates were successful :—

Anatomy and Physiology.—First Class Honours: William Andrew Hewitson, College of Medicine, Newcastle-upon-Tyne. Second Class Honours: Harold Mason Leete, College of Medicine, Newcastle-upon-Tyne. Pass List: Percy Vernon Anderson, William Duncan, Ernest Craig Dunlop, Mordecai Jacob Erdberg, Charles Gordon Irwin, Malcolm Cyril Joynt, Freda Newman, George Fleming Philip, and Harold Ivan Sterne-Bowitt, College of Medicine, Newcastle-upon-Tyne.

At the Third Examination for the degree of Bachelor of Medicine the following candidates were successful :—

Materia Medica, Pharmacology and Pharmacy, Public Health, Medical Jurisprudence, Pathology and Elementary Bacteriology.—Second Class Honours: Henry Evers, John Alexander Charles, and Arthur Edwin Raine, College of Medicine, Newcastle-upon-Tyne. Pass List: John Francis Carter Braine, Guy's Hospital; John Brumwell, Harry Cecil Broadhurst, George Albert Clark, Horace George Bennett Dove, and John Horsley, College of Medicine, Newcastle-upon-Tyne; and Hugh Gordon Sparrow, St. George's Hospital and College of Medicine, Newcastle-upon-Tyne.

Materia Medica, Pharmacology and Pharmacy, Public Health and Medical Jurisprudence.—Mary Russell Campbell, Reginald Arthur Hooper, Norman Alexander Martin, Carl Damien Newman, William Oxley Forster Sinclair, Alfred Cresswell Taylor, and Robert Welch, College of Medicine, Newcastle-upon-Tyne.

Pathology and Elementary Bacteriology.—Lionel Basil Frere, Harold Kingston Graham-Hodgson, and James Dixon Johnson, College of Medicine, Newcastle-upon-Tyne; Douglas Oliver Richards, Guy's Hospital; and Alfred Smirthwaite, College of Medicine, Newcastle-upon-Tyne.

COMPLIMENTARY DINNER TO DR. JOHN BROWNLEE.—Last week a large company, mainly composed of Glasgow medical men, but representative also of the other professions in the city, met in the Grosvenor Hotel, Glasgow, to do honour to Dr. John Brownlee, lately physician-superintendent of Ruchill Hospital, on the occasion of his appointment as statistician to the Medical Research Committee under the National Insurance Act.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The distribution of prizes at this school was made on Tuesday last by Sir Clifford Allbutt, Regius professor of physic at the University of Cambridge, who spoke hopefully of the future of the profession of medicine, which he considered would be enormously uplifted in the near future by the establishment of clinical and scientific centres all over the country. These, he said, would make the services of specialists available for every general practitioner at his need, while the necessity also of establishing a Ministry of Public Health was insisted upon.

RESEARCH DEFENCE SOCIETY.—The annual meeting of this society was held in the rooms of the Royal Society of Medicine on June 30th. The new President, Lord Lamington, in delivering his presidential address, said that the whole question of cruelty to animals should be considered in relation to the question as to how far it might be brutalising to the human mind. He referred to the predatory instincts found in animals, and said it might be presumed that if the wishes of dogs and cocks could be consulted they would enjoy nothing better than a good fight, but the law rightly held that whatever pleasure the animals might find in fighting it should not be allowed because of its brutalising effect on the human witnesses. He was honestly convinced that not physical pain so much as alarm to their instinct of self-preservation caused them suffering; anyone could see that they seemed indifferent to their wounds when unalarmed. All must recognise that pain was not felt with the same intensity by the lower creatures as by man, and even uncivilised man did not feel pain to the same degree as civilised man, while certain African races appeared totally insensible to pain and would on no account take an anæsthetic for an operation. In considering vivisection there could be no pain when the animals were experimented on under an anæsthetic and killed while under it. Only 5 per cent. of the experiments were of a surgical nature and these were done under an anæsthetic, and in many of them the animal was killed while under it. 95 per cent. of all experiments were of the nature of inoculations, and as to the question of pain in such, he had seen guinea-pigs infected with cancer moving about and feeding apparently without discomfort. The report of the Royal Commission showed that the actual pain caused was infinitesimal and in no degree comparable to that caused by the yearly mutilation of farm animals in millions of cases. In support of this he cited the evidence of Sir John MacFadyean before the Commission. In conclusion, he drew attention to benefits that had been derived from experiments on animals, alluded to the fact that in this way distemper among dogs might become curable, and pointed to the business of the

society as the educating of public opinion to the true character and method of experiments on animals. The report stated that the membership of the society now exceeds 5000. At the conclusion of the meeting moving pictures of various disease-producing organisms were shown.

LITERARY INTELLIGENCE.—The W. B. Saunders Company announce for early publication a new work on Anoci-association by Professor G. W. Crile and Dr. W. E. Lower, assistant professor of genito-urinary surgery, Western Reserve University.

DEATH OF A CENTENARIAN.—The death occurred at Chichester on June 26th of Mrs. Elizabeth Coote, who was born on April 5th, 1813. On her 100th birthday she had a motor-car ride for the first time in her life. She was a native of Sussex.

PRESENTATION TO A MEDICAL MAN.—Dr. Evan Alban, who practised for many years at Lindfield, Sussex, and has now gone to Wales to reside, has been presented by his many friends at Lindfield and the surrounding district with a cheque for £100 and an illuminated address.

TUBERCULOSIS SOCIETY.—We are asked to state that a meeting under the auspices of this society will be held at Leeds in the town hall at 7.45 P.M. on Wednesday, July 8th. Tuberculosis officers and practitioners specially interested in tuberculosis are invited to attend with a view to joining the society. A discussion on "The Future of the Tuberculosis Service" will be opened by the President, Dr. Halliday G. Sutherland.

ST. GEORGE'S HOSPITAL.—The introductory address at the opening of the winter session of St. George's Hospital Medical School on Oct. 1st will be delivered by the Master of Christ's College, Cambridge, Mr. A. E. Shipley, F.R.S., in the large lecture theatre, at 3 P.M. The Master of Christ's will also present the prizes to the successful students. On the same evening the annual dinner will be held at Princes Restaurant, Piccadilly, at 6.30 for 7 o'clock, when the Right Hon. Sir Gerard Lowther, G.C.M.G., joint treasurer of the hospital, will take the chair.

Dr. J. E. Blomfield presided over a complimentary dinner given at the Crown Hotel, Sevenoaks, by the practitioners of Sevenoaks, Tonbridge, and the surrounding district to Mr. Arthur Maude, of Westerham, and Mr. E. G. A. Walker, of Ightham, in recognition of their prolonged and valuable services to the medical profession both in the local administration of the British Medical Association and in connexion with the National Insurance Act. Mr. Maude, who is resigning the chairmanship of the Kent medical committee and retiring from practice, was afterwards presented with a set of silver dessert dishes, inscribed with the words, "Pignus amicitiæ et gratitudinis."

CENTRAL MIDWIVES BOARD.—Special meetings of the Central Midwives Board were held at Caxton House, Westminster, on June 9th and 10th, Sir Francis H. Champneys being in the chair. A number of midwives were struck off the roll, the following charges, amongst others, having been brought forward: The midwife disregarding the wish of the patient's relatives for medical assistance, and neglecting to take the pulse or temperature of a patient at her visits. A registered medical practitioner having been sent for on account of there being threatened danger the midwife did not await his arrival nor faithfully carry out his instructions as required by Rule E. 6; discontinuing attendance upon a patient at a time when she was dangerously ill. A child suffering from discharge from the eyes the midwife did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (5). Attending a patient wearing a skirt of non-washable material, as required by Rule E. 1; being unable to take the pulse or temperature of patients, and consequently being unable to comply with Rule E. 13. With intent to avoid inspection by the local supervising authority the midwife neglected in the month of January in this year, and subsequently, although practising, to notify her intention to practise as a midwife as required by Section 10 of the Midwives Act, 1902. Medical aid having been sought for the child the midwife neglected to notify the local supervising authority thereof, as required by Rule E. 21 (1); not keeping the register of cases as required by Rule E. 23; paying no visits to the patient on the fifth, seventh, and ninth days; neglecting to disinfect the hands and forearms as required by Rule E. 3 when making an internal examination of the patient, and neglecting to adopt the antiseptic precautions required by Rule E. 7 before making the first internal examination of the patient; neglecting to wash and swab the patient's external parts as required by Rule E. 7. The case being one of puerperal fever the midwife continued to attend other patients without having undergone any disinfection to the satisfaction of the local supervising authority, as required by Rule E. 5; neglecting to explain to patients that the attendance of a registered medical practitioner is required in cases where the rules require the midwife to do so; neglecting to visit patients with due regularity, or to attend to their cleanliness, comfort, or proper dieting, as required by Rule E. 11. That being in attendance at a confinement the midwife, well knowing that the child was stillborn, falsely informed the father of the child and made false statements to other persons that the child had been born alive and had lived for a stated space of time; and describing and notifying as stillborn children who have, in fact, been born alive.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on June 18th, Sir Francis H. Champneys being in the chair. Jurisdiction of the Board: A letter was considered from a certified midwife forwarding a copy of a notice sent to her by the Cleveland Division of the North of England Branch of the British Medical Association. The Board decided that it be pointed out to the certified midwife that medical practitioners are not under the jurisdiction of the Board. Signing of cases: Correspondence attending the sending in of a schedule by a candidate for the examination of June 15th in which she had falsified the names and dates of several of the patients attended by her and had then certified them to be correct and true in all respects was considered. The Board decided amongst other matters that as regards the signature of the medical practitioner as to the correctness of the cases the facts be communicated to the General Medical Council. Examinations: A letter was considered from the honorary secretary of the medical committee of the Birmingham Maternity Hospital asking the Board to arrange for the holding of six examinations each year at Birmingham. The Board directed that the application be granted. Qualifying cases: A letter was considered from the resident medical officer of a recognised training school asking the Board whether a portion of the 20 necessary cases taken two years ago may be counted as qualifying a candidate to enter for the examination of the Central Midwives Board. The Board decided that the resident medical officer be informed that the proposed procedure is contrary to the intention of the Board, and is in its opinion highly undesirable.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Milk and Dairies Bill.

A NUMBER of amendments have been introduced by the Standing Committee of the House of Commons into the clause in the Milk and Dairies Bill prohibiting the sale of tuberculous milk. The effect is that in order to succeed the prosecution will have to prove that the farmer or dairyman has received notice that the milk was infected or the product of a diseased cow, or that he knew it to be so, or that by the exercise of ordinary care he could have ascertained the fact. In regard to the mixed milk from a number of cows, Mr. HERBERT SAMUEL, the President of the Local Government Board, said that he proposed that the department should be authorised to make regulations to prevent danger arising from the sale of such milk or its use in manufactured products.

On Monday, June 29th, the committee had under consideration Clause 2, which contains provisions for the extension of the power to make orders respecting milk and dairies. Mr. ASTOR brought forward a proposal for the granting by local authorities of annual certificates of registration of dairymen and the suspension or revocation of such

certificates where a dairyman had been guilty of repeated or serious offences against the Act. This proposal was strongly opposed, and was ultimately negatived without a division.

Milk and Dairies (Scotland) Bill.

On Thursday, June 25th, the Scottish Standing Committee of the House of Commons adopted a provision which is designed to define the powers of a local authority to trace contaminated milk coming from an area outside its own. This took the form of a subsection to Clause 4 of the Milk and Dairies (Scotland) Bill. It was in the following terms: "When the medical officer of health or the sanitary inspector of any district is of opinion that any milk consigned to the district from any other district is contaminated or impure, or when the medical officer has any reasonable ground for believing that any milk consigned as aforesaid is likely to cause any infectious disease or other illness, it shall be lawful for the medical officer of health, sanitary inspector, or veterinary inspector to the first-named district, to inspect the dairy from which such milk has been consigned, and to examine the cattle therein, and the dairyman and persons in his employment shall give all reasonable facilities and assistance to such officers for such inspection and examination." Some complaint was made that this would have the effect of reducing powers of inspecting milk supplies already possessed by Glasgow and Edinburgh under private Acts, but the retention of those powers may be discussed at a later stage in the proceedings.

Excellent progress was made with the Bill on Tuesday, June 30th. Few alterations were made in the text. An amendment was introduced at the instance of Captain GILMOUR to protect the name "milk" against being applied to milk substitutes.

Vital Statistics for 1912.

The seventy-fifth annual report of the Registrar-General of Births, Deaths, and Marriages in England and Wales in 1912 has been presented to Parliament. In it it is stated that the birth-rate in 1912 was 23·8 per 1000, and was 3·0 below the average of the preceding decennium. It was the lowest rate on record, being no less than 0·6 below that of 1911 which was the next lowest. The provisional figures for 1913, however, indicate a rise of 0·1 per 1000 upon the rate of 1912, this being the first year since 1908 to show an increase. The report adds that in view of the fact that the rise in 1908 proved to be only a temporary check to the general downward tendency it would be unsafe to conclude that there is any present indication of a real check in the decline of the birth-rate. The death-rate in 1912 was 13·3 per 1000, and was 1·9 per 1000 below the average for the 10 preceding years. It was the lowest on record, being 0·2 per 1000 below the lowest previously recorded, that of 1910. Infant mortality was 95 per 1000 births, being 30 per 1000 below the average of the preceding decennium. It was the lowest rate on record, being 10 per 1000 births below the lowest rate recorded, that for the year 1910. The provisional infant mortality rate for 1913, when the summer conditions were less favourable to infant life, is 109 per 1000 births. It is noted that the death-rates from enteric fever, diphtheria and croup conjointly and diarrhœal diseases were the lowest recorded. Cancer caused a higher death-rate both among males and among females than in any preceding year, but the rate from tuberculosis as a whole was the lowest on record.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 24TH.

Glasgow Chemists' Accounts.

Mr. WATT asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the drug fund in Glasgow had turned out £2000 short for the first quarter of this year, with the result that the chemists on the panel there had been forced to accept a reduction on their accounts of 25 per cent.; whether he was aware that this swept away the whole margin of the profits of these chemists; and would he say what remedy he proposed to adopt to remedy this state of affairs.—Mr. WEDGWOOD BENN replied: The chemists in the area referred to have been paid in full for the period ending on March 14th last, but I would remind my honourable friend that the state of the drug fund cannot be fully ascertained until after the close of the medical year, and any payments in the meantime are in the nature of advances.

London Panel Fund Surplus.

Mr. WEDGWOOD BENN informed Mr. JOWETT that he understood that the London Insurance Committee was still considering its decision as to the precise method to be adopted in regard to the distribution of the panel fund surplus.

The Budget Grants.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury in what proportions the £750,000 proposed for the extension of the tuberculosis arrangements to dependents of insured persons, tuberculosis laboratories, and nurses was to be divided amongst the three items mentioned.—Mr. MONTAGU replied: It is proposed that of the sum referred to £400,000 should be allocated to tuberculosis services, £250,000 to nursing, and £100,000 to pathological laboratories.

Mr. WORTHINGTON EVANS: Have these grants been abandoned or are they in the amended Budget?—Mr. MONTAGU: They have not been abandoned. They are in the Finance Bill.

Small-pox at Pretoria.

Mr. TENNANT (Under Secretary of State for War) in reply to Mr. JOHN WARD said: So far as the Army Council are aware only one case of small-pox has occurred in the Bedfordshire Regiment at Pretoria. The man had undergone primary vaccination on enlistment in October, 1906. The case occurred in May, 1914, and the man had not been revaccinated since 1906. In the circumstances no change in the present regulations in regard to vaccination appears to be called for.

THURSDAY, JUNE 25TH.

The Mortality of Seamen.

Replying to Major ARCHER-SHEE, Mr. BURNS (President of the Board of Trade) wrote: The investigations into the mortality of seamen are being conducted by Mr. E. G. Moggridge, Mr. E. W. Colvill, Mr. C. Hipwood, Mr. T. F. Jenkins, and Captain A. H. Young, of the Board of Trade; Dr. A. H. Newsholme, of the Local Government Board; and Dr. T. H. C. Stevenson, of the General Register Office. They are considering the mortality among seamen on British merchant ships, as shown in the vital statistics, with a view to reporting what steps are desirable to diminish that mortality and how far such steps will need legislation. They will, if necessary, take evidence.

MONDAY, JUNE 29TH.

The Excessive Sickness Inquiry.

Mr. WEDGWOOD BENN stated in reply to Mr. CHARLES BATHURST that he was informed that the Departmental Committee upon excessive sickness in connexion with the National Insurance Act had finished taking evidence and hoped to report at an early date.

National Insurance and the Government of Ireland Bill.

Mr. NEWMAN asked the Chancellor of the Exchequer whether the proportion of the proposed grants due to Ireland in respect of National Health Insurance, feeding of school children, nursing, and health research would be specifically allocated in respect of the above enumerated or similar services, or would in the event of the Government of Ireland Bill becoming an Act be automatically added to the transferred sum and be at the disposal of the Irish Government.—Mr. LLOYD GEORGE answered: Subject to the provision of Clause 5 (2) of the Government of Ireland Bill all public services in Ireland in connexion with the administration of the National Insurance Act are matters reserved to the Government of the United Kingdom. The proposed grant in respect of National Health Insurance will be administered by that Government. The equivalent grants to Ireland corresponding to the grants in Great Britain for new educational services, tuberculosis, and pathological laboratories will be added to the transferred sum, and be at the disposal of the Irish Government.

TUESDAY, JUNE 30TH.

The Tariff to Chemists in Scotland.

Mr. WATT asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the tariff paid to chemists in Scotland under the National Insurance Act was the same as that paid to chemists in England, and whether the chemists in Scotland had shown the necessity because of the different circumstances existing there of having a Scottish tariff of prices instituted.—Mr. WEDGWOOD BENN replied: The tariffs in force in England were the subject of local negotiations with the various areas, and they afford no ground for a comparison of the circumstances of England as a whole with those of Scotland.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Practical Hormone Therapy. A Manual of Organotherapy for General Practitioners. By Henry R. Harrower, M.D., with Foreword by Professor Dr. Artur Biedl, Vienna. Price 15*s.* net.

CHAPMAN AND HALL, LIMITED, London.

The House on Wheels. By Elizabeth Sloan Chesser, M.B. Price 2*s.* net.

HODGE, WILLIAM, AND CO., Edinburgh and London.

The Trial of Mary Blandy. Edited by William Roughead. Price 5*s.* net.

JARROLD AND SONS, London.

How to Keep Fit. A Series of Special Lectures to Young Men delivered at the Central Y.M.C.A., London. By W. McAdam Eccles, M.S., M.B., F.R.C.S.; Sir Robert W. Burnet, M.D., F.R.C.P., J.P.; Sir Dyce Duckworth, Bart., M.D., F.R.C.P.; Sir R. Douglas Powell, Bart., K.C.V.O., M.D.; Sir George Henry Savage, M.D., F.R.C.P.; James Cantlie, M.A., M.B., F.R.C.S., D.P.H.; and Sir Francis H. Champneys, Bart., M.D., F.R.C.P. Price 1s. net.

LANE, JOHN, London and New York. BELL AND COCKBURN, Toronto.

The New Optimism. By H. de Vere Stackpoole. Price 3s. 6d. net.

LAURIE, T. WERNER, LIMITED, London.

Tales of Two Countries. By Maxim Gorky. Price 6s.

MATTHEWS, A., AND CO., LIMITED, Chancery-lane, W.C.

Matthews's Manual of Nursing Homes and Hydros of the British Isles and Guide to Spas and Health Resorts. Price 2s. 6d.

SAFAR, JOSEF, Wien und Leipzig.

Militärmedizin und ärztliche Kriegswissenschaft. Price M.8. Von der Abteilung herausgegeben und für dieselbe redigiert von generalstabsarzt Dr. Zdislaus Ritter v. Juchnowicz-Hordynski und Stabsarzt phil et med Dr. Erhard Glaser. Heft I., Kriegs- und Militärchirurgie sowie Verbandkunde. Heft II., Militärgesundheitspflege und Heeresseuchen. Heft III., Beiträge zum Truppensanitätsdienst. Heft IV., Interne Krankheiten. Heft V., Geistes- und Nervenkrankheiten. Heft VI., Ohren-, Nasen- und Halskrankheiten. Heft VII., Zahnheilkunde. Heft VIII., Die Salvarsanbehandlung beim k.u.k. Heere.

ST. CATHERINE PRESS, THE, 34, Norfolk-street, Strand, W.C.

Why Early Death? By M. C. Sykes, M.D., F.R.C.S.E., D.P.H. Lond., F.C.S. Price 6d. net.

SAUNDERS (W. B.), COMPANY, London.

Infant Feeding. By Clifford G. Grulee, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College, Chicago. Illustrated. Second edition, thoroughly revised. Price 13s. net.

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, 1913. By W. J. Mayo, M.D., C. H. Mayo, M.D., and their Associates. With 335 illustrations. Price 24s. net.

Chemical Pathology. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago, and in Rush Medical College, Chicago. Second edition, thoroughly revised. Price 15s. net.

SPON, E. AND F. N., London.

The Evolution of Greater Britain's Antiseptic House and Town Sewage-Drainage Systems of the Twentieth Century and After—for all Time. With Descriptions of Inherent Defects of the Nineteenth Century Systems and How to Overcome those Defects at Great Saving of Expense. By Isaac Shone, Civil, Mining, and Sanitary Engineer. Price 25s. net.

SPRINGER, JULIUS, Berlin.

Abwehrfermente. Das Auftreten blutfremder Substrate- und Fermente im tierischen Organismus unter experimentellen physiologischen und pathologischen Bedingungen. Von Emil Abderhalden (Halle). Price M.12.

UNIVERSITY PRESS, Cambridge.

The Life, Letters, and Labours of Francis Galton. By Karl Pearson, Galton Professor, University of London. Vol. I.: Birth, 1822, to Marriage, 1853. Price 21s. net.

Know Your Own Mind. A Little Book of Practical Psychology. By William Glover. Price 2s. net.

The Philosophy of Biology. By James Johnstone, D.Sc. Price 9s. net.

VIGOT FRÈRES, Paris.

Les Anomalies de l'Urine. Par A. Escaich. Price Fr.3.

WILSON, EFFINGHAM, 54, Threadneedle-street, E.C.

Partnership (Law and Practice). By H. C. Emery. Price 5s. net.

Dictators of Mexico. By John De Kay. Price 2s. 6d. net.

YEAR BOOK PRESS, 31, Museum-street, W.C.

Directory of Women Teachers and other Women connected with Higher and Secondary Education. 1914. Price 7s. 6d. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ASHBY, HUGH T., M.B., B.C. Cantab., M.R.C.P. Lond., has been appointed Honorary Physician to the Salford Royal Hospital.

DAVIES, H. W., M.B., B.S. Lond., has been appointed House Surgeon at University College Hospital.

DEAKIN, H. V., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

DE SOUZA, D. H., M.D., D.Sc., M.R.C.P., has been appointed Demonstrator in Physiology at King's College, University of London.

DICKSON, W. E. CARNEGIE, M.D. Edin., F.R.C.P. Edin., has been appointed Director of the New Pathological Department of the Royal Hospital for Diseases of the Chest, City-road, E.C.

GREGOR, ALEXANDER, M.D. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 59.

HUDSON, R., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Pontymister District of the county of Monmouth.

JONES, HOWARD, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Honorary Anæsthetist to St. Mark's Hospital for Diseases of the Rectum.

MORLEY, JOHN, Ch.M., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon for Children at the St. Mary's Hospitals, Manchester.

NYHAN, CHARLES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health of Brynmawr.

POSTLETHWAITE, J. M., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Whalley District of the county of Lancaster.

REES, F. H., M.B., B.S. Lond., has been appointed Obstetric Assistant at University College Hospital.

RICKARDS, J., M.B., Ch.B. Vict., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Brackley District of the county of Northampton.

ROBERTS, ROBERT ELLIS, M.B. Lond., has been appointed Medical Officer of Health to the Mynyddislwyn Urban District Council.

RUSSELL, J. R., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Westerham District of the county of Kent.

SEDGWICK, RICHARD ERNEST, M.D. Cantab., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 3.

SKERRETT, FRANK B., M.B., B.Sc. Lond. & Vict., D.P.H., M.R.C.S., has been appointed Assistant Medical Officer of Health and Chief Assistant School Medical Officer of the County Borough of West Ham.

STEADMAN, F. ST. J., D.P.H., L.R.C.P. Lond., M.R.C.S., L.D.S., has been appointed Assistant Dental Surgeon to the Royal Dental Hospital.

SUTCLIFFE, LIONEL E., M.B., Ch.B. Sheff., has been appointed Second Honorary Anæsthetist to the Chesterfield and North Derbyshire Hospital.

SYMONS, JOHN, M.R.C.S., L.S.A., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 59.

UNDERWOOD, B., M.B., B.S. Lond., has been appointed Clinical Assistant in the Dental Department at University College Hospital.

WATT, R. H., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Langholm District of the county of Dumfries.

WILLIS, MORLEY, F.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 18.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERGAVENNY, MONMOUTHSHIRE ASYLUM.—Locum Tenens Assistant Medical Officer. Salary 6 guineas per week, and all found.

ARGYLL AND BUTE DISTRICT ASYLUM, Lochgilphead.—Medical Superintendent. Salary £500 per annum, with house and allowances.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BETHLEM ROYAL HOSPITAL, Lambeth-road, S.E.—Second Assistant Medical Officer, unmarried. Salary £275 per annum, with apartments, board, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £240 per annum, with apartments, fire, light, and attendance.

BIRMINGHAM, QUEEN'S HOSPITAL.—One House Physician and Two House Surgeons for six months. Salaries at rate of £50 per annum, with board, lodging, and washing.

BOARD OF CONTROL.—Medical Superintendent of a State Institution for Defectives of Dangerous or Violent Propensities shortly to be opened near Liverpool. Salary £800 per annum and unfurnished house.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House Surgeon for six months. Salary £75 per annum, with board, residence, and laundry.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £110 per annum, with apartments, board, and attendance.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRENTFORD UNION INFIRMARY, WARKWORTH HOUSE, AND SCHOOLS, Isleworth, W.—Second Assistant Medical Superintendent, unmarried. Salary £175 per annum, with usual residential emoluments.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House Surgeon. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CAMBERWELL TUBERCULOSIS DISPENSARY, 19, Brunswick-square, S.E.—Assistant Medical Officer. Salary £250 per annum.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—Two House Surgeons for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, London, S.W.—Surgeon to In-patients.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £140 per annum, with board, washing, apartments.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

DERBY MENTAL HOSPITAL.—Senior and Junior Assistant Medical Officer. Salaries £250 and £200 respectively, with board, apartments, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer to Casualty Department for six months. Salary at rate of £100 per annum, with luncheon and tea. Also House Physician. Salary at rate of £75 per annum, with board, residence, and laundry.

ESSEX EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £300 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Surgeon for four months. Salary at rate of £75 per annum, with board, residence, and washing.

GLOUCESTERSHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

HALIFAX ROYAL INFIRMARY.—Second House Surgeon and Third House Surgeon, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

HERTFORD COUNTY HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, washing, and rooms.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Assistant Physician. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence. Also House Physician for six months. Salary 30 guineas.

HUDDERSFIELD ROYAL INFIRMARY.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, and washing.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £80 per annum, with board and lodging. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Honorary Assistant Ophthalmic Surgeon.

INDIAN MEDICAL SERVICE.—Thirteen Commissions.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

KING'S LYNN, WEST NORFOLK AND KING'S LYNN HOSPITAL.—House Surgeon. Salary £150 per annum.

LAMBETH PARISH INFIRMARY WORKHOUSES, Brook-street, Kennington-road, S.E.—Fourth and Sixth Assistant Medical Officers. Salary at rate of £160 and £150 per annum respectively, with residential allowances.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LEEDS TUBERCULOSIS ASSOCIATION.—Resident Medical Officer at Sanatorium, Gateforth, near Selby, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LIVERPOOL CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, washing, and lodging.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—Research Assistant at Runcorn Research Laboratory. Salary £150 per annum.

LIVERPOOL STANLEY HOSPITAL.—Two House Physicians and a House Surgeon. Salary £75 per annum each, with board, residence, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

MAIDSTONE, WEST KENT GENERAL HOSPITAL. — Assistant House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female Obstetric Assistant. Board, lodging, and washing provided.

NORTHAMPTON GENERAL HOSPITAL.—Two House Surgeons, unmarried. Salary £120 per annum each, with apartments, board, washing, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

OGMORE AND GARW URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £325 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £90 per annum, with board, residence, and washing.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £90 per annum, with board, &c.

PRESTON, COUNTY ASYLUM, Whittingham, Lancs.—Junior Assistant Medical Officer and Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, &c.

PRESTON COUNTY BOROUGH.—School Medical Officer. Salary £350 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Junior House Physician and Junior House Surgeon for six months. Salary £75 per annum each, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for three months. Salary £80 per annum, with board, residence, and washing.

RETFORD, STATE CRIMINAL LUNATIC ASYLUM.—Assistant Medical Officer, unmarried. Salary £225 per annum, with quarters, coals, light, and attendance. Also Medical Locum Tenens. Salary £5 5s. per week, with quarters, coal, light, and attendance.

ROCHDALE INFIRMARY AND DISPENSARY.—Senior and Junior House Surgeons, unmarried. Salary £120 and £110 per annum respectively, with board, residence, and laundry.

ROTHERHAM HOSPITAL.—Senior and Junior House Surgeons. Salaries £200 and £100 respectively, with board, lodging, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Assistant Anæsthetist. Salary £75 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five Appointments.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Surgeon to Out-patients. Also Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, Salary at rate of £100 per annum, with board, residence, and laundry.

SALFORD COUNTY BOROUGH.—Junior Resident Medical Officer at Ladywell Sanatorium, Salford. Salary £150 per annum, with apartments, &c.

SALFORD ROYAL HOSPITAL.—House Surgeon, Junior House Surgeon, and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

SALISBURY (GENERAL) INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and lodging.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, &c.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL (OUT-PATIENT DEPARTMENT).—House Surgeon. Salary £120 per annum, with board and residence.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £110 per annum, with board and apartments.

SOMERSET COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £300 per annum.

SUNDERLAND ROYAL INFIRMARY.—Two Junior House Surgeons. Salary £100 per annum each, with board, residence, and laundry.

SURREY COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £400 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—Two House Surgeons. Salary £125 per annum, with board, washing, and attendance.

TRINIDAD AND GRENADA, BRITISH WEST INDIES.—Two Assistant Medical Officers in Campaign against Ankylostomiasis. Salaries £400 per annum.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.—Lecturer and Demonstrator in Anatomy. Salary £350 per annum.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Junior Surgical Registrar. Salary £80 to £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board and lodging.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon. Salary £110 per annum, with board, residence, and laundry.

WARWICKSHIRE AND COVENTRY JOINT COMMITTEE FOR TUBERCULOSIS.—Tuberculosis Medical Officer. Salary £500 per annum.

WEST AFRICAN MEDICAL STAFF.—Appointments. Salary £400 per annum, with free quarters. GIBRALTAR: Second Assistant Colonial Surgeon. Salary £360 per annum, with free quarters.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Clinical Assistants to the Out-patients' Physicians.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Junior House Physician and Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

WEST HARTLEPOOL, CAMERON HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and rooms.

WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Third Assistant Medical Officer. Salary £140 per annum, with board, residence, and washing.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

WILLESDEN URBAN DISTRICT COUNCIL.—Consulting Ophthalmic Surgeon. Salary at rate of 1 guinea per hour. Also Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £300 per annum.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £120 per annum, with apartments, board, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Harris, in the county of Inverness; and at Southwell, in the county of Nottingham.

Births, Marriages, and Deaths.

BIRTHS.

ADAMS.—On June 23th, at Labuan, Straits Settlements, the wife of J. Wilmot Adams, M.B., C.M., of a daughter.

FINN.—On June 29th, at Ebury-street, Eaton-square, S.W., the wife of Allan Finn, M.D., F.R.C.S., of a son.

GREEN.—On June 26th, at Romford, the wife of Charles David Green, M.D. Lond., F.R.C.S. Eng., of a daughter.

MARRIAGES.

HUNT—STUBBS.—On June 25th, at St. Gabriel's, Westminster, Edwin Guy Hunt, M.D., M.R.C.S., L.R.C.P., to Kate Millicent Stubbs.

MITCHELL—BRUCE.—On June 27th, at St. Barnabas, Kensington, W., T. J. Mitchell, Captain R.A.M.C., to Blanche Katherine, eldest daughter of the late Robert Bruce, M.D., F.R.C.S.E., Edinburgh.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

CARBOLIC ACID INJECTIONS IN TETANUS.

To the Editor of THE LANCET.

SIR,—I have only recently returned from China. In reply to Dr. F. Carden Brodie's letter in your issue of May 30th last, with reference to my paper in THE LANCET of May 23rd the following table, which was accidentally omitted, shows the dosage given:—

Day after admission.	Temperature, Fahr.		Pulse.		Times.	Injection.		Anæsthetic given.
	M.	E.	M.	E.		Amount. oz.	Strength. %	
1st day	99·0°	100·5°	124	108	2 A.M.	1½	1	Yes.
					2 P.M.	2	2	,,
					10 P.M.	2	2	,,
2nd ,,	99·0°	101·0°	108	124	10 A.M.	2	2½	,,
					2 P.M.	2	2½	,,
					10 P.M.	2	2½	,,
3rd ,,	99·0°	100·5°	116	108	10 A.M.	2½	3	,,
					6 P.M.	2½	3	,,
4th ,,	99·0°	102·0°	114	130	2 A.M.	2½	3	,,
					10 A.M.	2½	3	,,
					6 P.M.	2½	3	,,
5th ,,	101·2°	99·3°	130	140	10 A.M.	2½	3	,,
					10 P.M.	2½	3	,,
6th ,,	98·6°	100·0°	120	136	—	None given.		—
7th ,,	99·0°	101·2°	124	110	10 A.M.	3	3	Yes.
8th ,,	98·6°	100·0°	104	112	—	None given.		—
9th ,,	99·0°	99·5°	104	104	—	,,	,,	—
10th ,,	99·0°	101·5°	102	116	2 A.M.	2½	3	Yes.
11th ,,	98·6°	99·0°	108	112	10 A.M.	1½	3	,,
					10 P.M.	2½	3	,,
12th ,,	100·8°	99·0°	100	124	2 P.M.	2½	3	,,
13th ,,	99·0°	99·0°	96	128	—	None given.		—
14th ,,	99·0°	100·0°	100	106	2 P.M.	2½	3	Yes.
15th ,,	99·5°	99·0°	108	120	2 P.M.	2½	3	,,

I am, Sir, yours faithfully,

W. GRAHAM REYNOLDS.

St. Mary's Hospital, W., June 22nd, 1914.

HEALTH AND SANITATION IN CEYLON.

A SUPPLEMENTARY report on the affairs of Ceylon for the year 1912 (delayed on account of fresh arrangements in connexion with the publication of the Blue-book of the colony) has just been presented to Parliament. It shows that the estimated population on Dec. 31st was 4,189,000. There is an excess of males over females, the proportion being 113 males to 100 females. The birth-rate for 1912 was 33 per mille, and was lower than the average (38). It appears to be gradually declining. The death-rate for the whole island was 32 per mille, and was in excess of the average (28). The Ceylon rate appears to be lower than that of Bombay, but higher than rates in Bengal, Madras, Jamaica, and British Guiana. The infantile mortality was 215 per 1000 births, compared with an average of 183. Snakebite, homicide, and suicide each accounted for 50 deaths per 1,000,000 of the population. There were 29 executions—i.e., 7 per 1,000,000, as compared with 4 per 1,000,000 in England and Wales. The tea, rubber, and cocoa estates contain a population of about 578,200, mostly of Tamils immigrant from Southern India. The estate death-rate rose to 40 from an average of 35, and in one district was as high as 72. The chief causes of death were fever (chiefly malarial), diarrhœa, dysentery, pneumonia, and phthisis. There were only 13 deaths from cholera, as against 277 in 1911 and 22 in 1910. Deaths from small-pox numbered 15, as against 89 in 1911 and 29 in 1910. Ankylostomiasis claimed 1843 victims, as against 2001 in 1911. Measures have been taken for the prevention of malaria by the free distribution of quinine, the circulation of leaflets, and lectures and demonstrations to the public through the officers of the Medical Department and the headmen. Ankylostomiasis, which is extremely prevalent amongst estate coolies, especially in the low country, has been and is receiving considerable attention on the part of the inspecting medical officers. A large number of estates have been visited by them, and both prophylactic and medical treatment are being adopted. Parangi (yaws) has been treated successfully with salvarsan in some of the hospitals, and arrangements are being made to introduce it to other hospitals. Vaccination is systematically carried on throughout the island by a special staff. During the year 140,501 subjects were vaccinated. The percentage of successful primary vaccinations to total inspected was 93·3, while that of successful re-vaccination cases was 71·7. Stringent precautions are taken under the auspicies of the plague committee to prevent the introduction of plague into Ceylon, which has hitherto been immune from the disease. One case of plague in a European was landed at Galle in July, the patient recovering. There were 14 deaths from hydrophobia, as against 38 in the previous year. The Ceylon Government gives an annual grant to the Pasteur Institute at Coonoor, and poor persons bitten by rabid animals and unable to bear the expense of the journey are sent there at the cost of the Government. Concerted action is being taken by the local authorities to stamp out rabies by enforcing the registration of dogs and by the destruction of homeless vagabond dogs (pariahs).

The drainage of Colombo has been undertaken by Government at the request of the municipal council, the necessary funds being advanced by Government on loan, while further assistance is being given by the contribution of a part of the expenditure as a free grant. The scheme provides for a complete system of sewers and rain-water drains throughout the city and for the disposal of the sewage by bacterial treatment upon modern lines. With the assistance of Government, partly by way of grant, partly of loan, various local bodies have undertaken the provision of an improved water-supply for the towns under their control.

There is a marked variation in climate between the different parts of Ceylon. In the low country, with a mean temperature of the order of 80° F., a noticeable feature is the small range of both temperature and pressure. There is, however, wide divergence between the moist conditions in the south-west of the island, where the annual rainfall is often over 100 inches, and the dry zone areas of the north, north-west, and south-east. Inland, with altitudes reaching 8000 feet, the temperature is cooler and shows a bigger daily range; there is a corresponding change in vegetation, and the conditions are altogether more akin to those in the temperate zone. The rainfall of 1912 was below normal in the north and north-east, and above it in the south and south-west. Ratnapura again headed the list in absolute amount—viz., 149·95 inches, which is practically identical with the average for that station. Colombo observatory, with 101·14 inches on 195 days, was well above normal. The mean temperature at Colombo was 81·0° F., and at Kandy 76·6°. The highest temperature reached in the island was 100·2° on August 10th at Anuradhapura. The highest on record is 103·7° at Trincomalee on May 12th, 1890.

There are 76 Government hospitals, the number of beds in them ranging from 30 to 425. In addition, there are 418 out-door Government dispensaries and 279 estate dispensaries supported by the planters, who get their drugs free up to a value of 50 cents per cooly per annum. The Lunatic Asylum is situated in Colombo. There are 714 inmates. The Leper Asylum is situated about six miles from Colombo, and contains 398 patients. A small establishment for lepers exists in the eastern province, and contains 36 patients. A large leper settlement is to be founded there shortly. In association with Government a home for incurables (containing 80 beds) is worked by a committee of Government officials and representatives of the public.

The Medical College accommodated in 1912 148 medical and 90 apothecary students. The full course of training for medical students is five years. A diploma in medicine, surgery, and midwifery (which can be registered in the United Kingdom) is granted to successful students. In association with the college there are a bacteriological institute with a small clinic for tropical medicine attached, a laboratory for the Government analyst, an ophthalmic hospital, a lying-in home, a woman's hospital, a children's hospital, and special hospitals for the insane, lepers, and infectious diseases.

SEA-BATHING AND COLD BATHS.

SEA-BATHING began to be popular in England in the "seventies" of the eighteenth century. In 1779 Margate is referred to as "a place of great resort for sea-bathing." Our quotation is from "A Tour Through the Island of Great Britain," eighth edition, a work begun by Daniel Defoe and continued by Samuel Richardson. Later we read, "Brighthelmstone is now become a polite place, and very convenient for sea-bathing. Several machines have been built." In other early guide-books of this period the machines are elaborately described and illustrated, and it is to be noticed that the little dome-like tent, still sometimes seen at the back or sea-door of the machine, was

intended to ensure privacy for persons in the costume of Adam or even of Eve. The sea-bath was adventured on for hygienic purposes. It was supposed by its more enthusiastic advocates, such as Dr. White, a writer on the subject in 1775, to cure quite a number of diseases. The sea-bath did not reach the continent until many years later. At the time of the Restoration, after Waterloo, certain English families, driven from their own country by creditors, brought the custom to Dieppe. All the gouty and lame among the new immigrants are said to have gone to the bleak northward-facing beach in the month of August, and there, leaving their clothes in heaps, they "bravely presented their heads and shoulders to the waves." In other words, the men bathers struck out to sea. They soon found Gallic imitators. Remarkable salt-water cures were recorded. Certain famous French physicians took the custom under their protection and fashion did the rest. Hence, when Vitet published his "Guide to Dieppe" in 1844—it is quite a work of literature—he was able to refer to an annual exodus of sea-bathers to all the French seaside towns and villages. Such baths, says this writer, are not the remedy of every ill; it would certainly be easier to cite the illnesses to which they are hostile than to make out a list of those which they can successfully combat or root out. The *établissement* at Dieppe dates from 1821, but although patronised by the famous Duchesse de Berry, it was probably for long regarded as somewhat of a fad. Indeed, as we travel eastward in Europe we find that wonder at the English bathing habit increases apace. From Paris eastwards it is common form to say that "the English must be a very dirty people" to require so many baths, and as we reach Vienna we find the bath regarded as an occasional luxury only. Yet the ancient Teutons, according to Tacitus, were the original users of the cold river bath. How can we account for the shyness in this matter of their direct descendants? And how is it that the Gaul, the inheritor of Roman tradition, is not an ardent advocate of the bath?

A WARNING.

To the Editor of THE LANCET.

SIR,—By the advice of the police I am warning your readers against a man of gentlemanly and plausible address who consulted me on June 24th, paying his fee by a cheque on the Tottenham Court-road branch of the London City and Midland Bank. This draft was returned marked "no account," and the book from which it was torn is one issued some years ago by the bank. It appears, further, that another doctor besides myself has similarly been defrauded recently. The man is of medium height, dark, heavily jowled, and wearing a short moustache. He gave the name of "J. Howard Stewart" and his age as 38 and 9 months, but he may use other aliases.

I am, Sir, yours faithfully,
MACLEOD YEARSLEY.

Queen Anne-street, W., June 30th, 1914.

THE NIGHTINGALE FUND: PROPOSED NEW SCHEME OF SCHOLARSHIPS FOR NURSES.

THE Nightingale Fund owes its origin to the recognition by the nation of the work done by Miss Nightingale in the Crimea. The sum offered to her she applied in various ways for the improvement of nursing, and particularly in founding the school for the training of nurses. This school was connected with St. Thomas's Hospital, where it still remains, and has served as the model for the numerous training schools which now exist both here and abroad. The fund is administered by a council acting under a trust deed drawn up in the lifetime of Miss Nightingale herself, and was applied at its inception to pioneer work in nurse training, and the council is strongly impressed with the belief that this object should remain as one of its guiding principles to-day. The pattern set by Miss Nightingale in 1860 has been widely followed, and in the ordinary training of nurses no more pioneer work remains to be done. The council has therefore been considering whether there be not something yet lacking in nurse training in which their fund could enable them once more to lead the way.

It is from the ranks of trained nurses that must be drawn those who are called to fill the higher posts in the profession—matrons, superintendents, inspectors, and the like; and while the demand for these grows ever with the growth of the movement, it becomes increasingly difficult to find a due supply of fit and proper persons to fill such posts. Many women to-day are admirable nurses, but their training has not reached beyond nursing; for filling the higher posts a wider knowledge of administration and social work is needed, which the existing training schools do not give. Nor are they to be blamed for the omission; so multifarious have the items become which now go to the training of a nurse, that they have no time for it. It is this further and fuller training that the Nightingale council now propose to offer in the form of scholarships to be called Nightingale scholarships. The scheme is not yet fully matured, but its outline is briefly this: the council will offer every year a limited number of scholarships to nurses who have obtained a certificate after three years' training in some recognised school. These scholarships will entitle the holders to a year's training at the Household and Social Science Department of King's College for Women in the University of London. This department, which will be carried on in the new buildings now in course of erection on Campden Hill, has specially applied itself to the teaching required. Its specially fitted laboratories are in close proximity to the experimental kitchen and laundry which form a portion of the hostel where the practical arts are taught. The college has met the council in every way in the preparation of a suitable course, so conceived as to embrace both theory and practice. Every endeavour will be made to keep in view the object of the course—namely, to equip trained nurses to undertake the responsible positions they are likely to be called on to fill. The subjects chosen will, to this end, be dealt with largely from the practical point of view; and, as experience adds to knowledge, this, the first scheme, will no doubt be modified later, both by omission and addition. It is also intended to ensure the elasticity of the scheme by introducing the principle of alternative subjects, so that a scholar shall be able to select such courses as shall seem most likely to help in the ambitions she may have placed before herself. The value of the scholarships will be adjusted to meet the tuition fees, to provide maintenance during the year, and to compensate in some degree for the salary the year's training will oblige the scholar to forego. The new buildings of the college include a hostel in which scholars would be able to reside should they so wish. The scheme is experimental, and its continuance must depend upon its success; we cannot but think that the want of such higher practical training is a real one, and nurses will gladly avail themselves of the new opportunities. Its very tentativeness should help to its success, for if, as the council believes, the principle be a wise one, its application can be varied with the years until an ideal scheme be evolved.

THE EYESIGHT OF RECRUITS.

To the Editor of THE LANCET.

SIR,—Can any of your readers tell me where I can obtain information on this matter? What I more particularly want to know is the percentage of men who are rejected on account of myopia. I am, Sir, yours faithfully,

J. A. WILSON, M.D. Glasg.

Glasgow, June 29th, 1914.

A HARD CASE.

Dr. S. C. Lawrence, medical officer of health of Edmonton, writes on behalf of a widow in poor circumstances who has to go out to work daily, but unfortunately she has a boy, aged 3 years, who is frequently having severe epileptic fits. This condition compels her either to refuse work or pay a neighbour 4s. weekly to look after him. This is (either way) a heavy tax on her slender purse, and makes her efforts to support the other children and herself futile. Dr. Lawrence asks for suggestions as to where this boy might be sent to, either free or at a very small charge, which may be addressed to him at the Town-hall, Lower Edmonton, N.

THE STORAGE AND PRESERVATION OF FOOD.

WE have received an inquiry from a reader who, fearing the worst with the *respublica* in the near future, desires to know how he may store up food against a time of famine or want, or of high prices, or when strikes occur which will affect the purchasing power of money. He especially mentions flour, currants, and beans as things which he would like to preserve. The story of ensilage which interested farmers greatly in the "sixties" and "seventies" partly answers the question. It is generally stated that for cattle the idea in its modern form originated in M. Auguste Goffart's book published in France in 1877, translated into English in 1879. In THE LANCET of Jan. 11th, 1862, it is stated that "amongst the novelties in the botanical world I may mention the following, which possibly may be of use to agriculturists:—The *Journal de Fécamp* publishes a letter from M. St. Réquier, a farmer of the neighbourhood, as to the possibility of preserving green fodder for a length of time. He digs a pit in a stiff clay soil, with slanting sides, so as to preserve in form an inverted pyramid; he then cuts his hay, clover, or whatever description of crop he desires to preserve, and causes it to be tightly jammed into the hole and then covered over with soil again. In this way he has preserved fodder for upwards of two months, and states that in rainy years, when only bad hay can be obtained, the plan may be resorted to with considerable saving." We think that in this paragraph "two months" should have read "two years." The question of providing a *cache* for stores of

human food is a little different in a country where to hide your food in an igloo snow-house or ice-cave is impossible That artificial refrigeration costs money is the reply to our correspondent's question. The storage of meat is said to be 1*d.* per stone per month. A joint of meat has just been exposed at Smithfield market after having been kept refrigerated for 18 years, and apparently it is still good enough for human food. At the beginning of this year a family at the mouth of the Thames shared the remains of a wedding cake 50 years old. We have also heard of the mummy wheat of the time of the Pharaohs, used as seed, but all these pale into insignificance at the memory of somebody cutting and eating a steak from a mammoth whose age was computed to be tens of thousands of years of preservation in the solid ice. Tinning food is the modern method of preserving it, and we do not know the greatest age of any tinned food which has been considered wholesome enough for food, but as we stated in an annotation in THE LANCET of Feb. 25th, 1911, on canned goods and the public health, it has been shown that the quantity of tin dissolved increases with the age of the goods, because the acid juices continue to act upon the metal, but with other substances it might be possible to avoid or postpone this contamination. Some retailers say that certain foods improve by prolonged keeping—e.g., sardines. There is no doubt that in the packing and preserving of fruit some colonists could give us a few hints. The following are a few of the things employed: tissue paper or wood shavings, cotton- or wood-wool, dry moss, cork dust and muslin, charcoal, and ice. The colonial authorities have provided extensive cold storage stores on shore, and the shipping companies have done a good deal by providing refrigerating chambers of special construction, although all these precautions are more or less nullified unless the colonist packs dry and well-chosen goods. Every housewife knows how difficult it is to keep the mould from the cheese, from the bread in the pan, and from the bottled pickles, fruits, and jams. Freezing or chilling is the sheet-anchor of food preservation nowadays, and millions of pounds' worth of frozen meat, rabbits, hares, and fish are transported, and salting or smoking is resorted to with meats and sun-drying or the artificial exhaustion of moisture with fruits; but it is known that in prolonged storage these things will often lose weight and engender a condition of staleness. The difficulty of keeping food arises from the fact that where the food is there will the living things be gathered together to feed on it, and the farmer and colonist have a continual fight at great expense against the fruit flies, flesh flies, devastating insects of all kinds and fungi and blights of extraordinary pertinacity in order even to be able to get the produce as far as our tables, and when we have got it there we in our turn find the fight continued to preserve it. Evidently food is not meant to be kept for any great length of time, at all events only for winter storage.

P. H.—When thallium pomade is used there is always the risk of absorption, though this occurs only very rarely. The effect of absorption might show itself either by a general depilatory action or by effect on the general system.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 1st, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 25	30·27	W.	...	121	75	56	58	60	Cloudy
,, 26	30·37	N.E.	...	118	74	54	57	62	Fine
,, 27	30·27	S.E.	...	121	79	56	58	63	Fine
,, 28	30·36	W.	...	125	80	59	62	67	Fine
,, 29	30·23	N.W.	...	127	83	60	65	70	Fine
,, 30	30·13	S.W.	...	131	87	66	66	75	Fine
July 1	29·89	S.E.	...	134	90	68	66	75	Fine

The following magazines, journals, &c., have been received:—Canadian Medical Association Journal, Annales Paulistas de Medicina e Cirurgia, Interstate Medical Journal, Indian Medical Gazette, Journal of State Medicine, Archives of Internal Medicine, Klinic für Psychische und Nervöse Krankheiten, Mercy and Truth, Archiv für Schiffs- und Tropen-Hygiene, Journal of Nervous and Mental Diseases, South African Medical Record, Journal of the Royal Sanitary Institute, Ophthalmoscope, American Journal of Orthopedic Surgery, Therapeutic Gazette, &c.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Mr. L. Mummery: Chronic Obstruction of the Large Bowel.

TUESDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Mr. J. W. T. Walker: Urinary Antiseptics.

WEDNESDAY.—4 P.M., Mr. P. P. Cole: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. Wylie: The Diagnosis and Treatment of Tubercular, Syphilitic, and Malignant Disease of the Larynx.

THURSDAY.—4 P.M., Dr. W. H. Willcox: Clinique (Medical). 5.15 P.M., Lecture:—Dr. A. F. Tredgold: Mental Deficiency Act.

FRIDAY.—4 P.M., Dr. H. W. Lyle: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye. 5 P.M., Lecture:—Mr. Addison: Tumours and Diseases of Bone.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Clinical Lecture:—Dr. Davis: Diseases of the Throat.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye. 5 P.M., Lecture:—Mr. Addison: Tumours and Diseases of Bone.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. 5 P.M., Lecture:—Mr. Addison: Tumours and Diseases of Bone.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Clinical Lecture:—Dr. Davis: Diseases of the Nose.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Operations of the Eye. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. H. B. Carilll: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Throat, Nose, and Ear.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. H. Zundel: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.15 P.M., Sir Malcolm Morris: Skin.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. H. B. Carilll: Medical. Mr. Cecil Rowntree: Surgical. 11 A.M., Mr. R. H. Bickerton: Eye.——2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. H. R. Prentice: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. H. Zundel: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford: Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. H. R. Prentice: Medical. Mr. Cecil Rowntree: Surgical. 11 A.M., Mr. R. H. Bickerton: Eye.——10 A.M., Col. Barry: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. H. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. R. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.
MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 P.M., Wards, Dr. Phear.
TUESDAY.—9 A.M., Laryngological Department, Mr. Mant. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 P.M., Wards, Dr. White. 4 P.M., Wards, Dr. M. Leslie.
WEDNESDAY.—2 P.M., Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.
THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phear, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.
FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Leslie, Dr. B. King.
SATURDAY.—10 A.M., Out-patient Department, Dr. Drysdale, Dr. Kellie. 11.30 A.M., Roentgen Ray Department, Dr. Jordan.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.
WEDNESDAY.—4.30 P.M., Dr. Miller: The Morbid Anatomy of Tuberculous Lesions in Relation to Morbid Physical Signs.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.
Course of Demonstrations for Post-Graduates:—
WEDNESDAY.—4 P.M., Dr. W. A. Chaplin; Demonstration of Cases in the Wards.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.
TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Facial Neuralgia and its Treatment.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Recent Methods of Treatment of Parasyphilitic Disease.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
TUESDAY AND FRIDAY.—3 P.M., Mr. Stuart-Low: Diseases of the Ear.

THE THROAT HOSPITAL, Golden-square, W.
MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.
TUESDAY.—MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES, Quay-street.—4.30 P.M., Dr. W. Dyson: Tuberculosis of the Skin (II.).
WEDNESDAY.—ROYAL INFIRMARY—4.30 P.M., Mr. Ray: Tumours of the Inguinal and Scrotal Regions.
THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Mr. Platt: Infantile Paralysis.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
,, 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June 24th–July 9th (London, Royal Agricultural Hall).—Fourth International Rubber and Allied Industries Exhibition.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 6th–11th (Blackpool).—Twenty-ninth Congress of the Royal Sanitary Institute.
,, 7th and 8th (Leeds).—Sixth Annual Conference of the National Association for the Prevention of Consumption, &c.
,, 7th–10th (St. John, N.B.).—Canadian Medical Association.
,, 8th–10th (Oxford).—Ophthalmological Congress.
,, 15th–20th (Edinburgh).—Congress of the Royal Institute of Public Health.
,, 21st–23rd (Chester).—British Pharmaceutical Conference.
,, 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
,, 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Messrs. Arnold and Sons, Lond.; Australian Book Co., Lond.; Messrs. Anderson and Allan, Glasgow; Automobile Association and Motor Union, Lond.; Dr. John Aikman, Guernsey; Addenbrooke's Hospital, Cambridge, Secretary of; Army and Navy Male Nurses' Co-operation, Lond., Secretary of; Mr. J. Astier, Asnières.
B.—Mr. D. Barjorjee, Ahwaz; Mr. W. H. Bowling, Pembroke Dock; Mr. A. Bona, Moscow; Messrs. A. Bishop, Lond.; Bedford County Hospital, Secretary of; Mr. C. S. Bond, Liphook; Messrs. Bowes and Bowes, Cambridge; Messrs. T. B. Browne, Lond.; Mr. G. D. Brown, Harrogate; Bournemouth Education Committee, Director of; Bristol Royal Infirmary, Secretary of; Messrs. W. H. Bailey and Son, Lond.; Messrs. C. Barker and Sons, Lond.; Messrs. W. Browning and Co., Lond.; Messrs. Burroughs

[*Acknowledgments continued on next page.*

Wellcome and Co., Lond.; Brentford Guardians, Clerk to the; *British and Colonial Druggist*, Lond., Manager of; Messrs. Baiss Brothers and Stevenson, Lond.; Mr. C. Birchall, Liverpool; Dr. S. N. Bruce, Lond.; Beckenham, Medical Officer of Health of; Dr. P. F. Barton, Lond.; Board of Education, Lond., Secretary of; Dr. Julius Bernstein, Lond.; Dr. C. A. Bucklin, Glasgow; Mr. Ernest Bell, Lond.; British Fire Prevention Committee, Lond., Registrar of; Sir Lauder Brunton, Bart., Lond.; Bolingbroke Hospital, Lond.; Messrs. Butterworth and Co., Lond.; Mr. H. Butterfield, Northampton; Fleet-Surgeon P. H. Boyden, R.N., Lond.; Mr. F. Handel Booth, Lond.; Dr. John Biernacki, Lond.

C.—Mr. H. A. Collins, Croydon; Mr. S. Coxon, Hampton Wick; Clinical Congress of Surgeons, Lond., Manager of; Dr. T. Colvin, Glasgow; Chadwick Trust, Lond., Secretary of; Dr. Albert J. Chalmers, Khartoum; Dr. Raymond Crawfurd, Lond.; Children's Country Holidays Fund, Lond., Secretary of; Mr. Adrian Caddy, Calcutta; Messrs. B. Cook and Co., Lond.; Nurse Clowes, Wolverhampton; Croydon Corporation, Medical Officer of Health of; Major W. S. Crosthwait, R.A.M.C., Folkestone; Dr. D. J. Clark, Glasgow; Messrs. C. D. Clayton, Lond.; Dr. H. W. Cattell, Philadelphia; Curhäuser Somvixertal Grisons, Manager of; Cornwall, County Medical Officer of Health of, Truro; Nurse Carruthers, Lond.; *Concrete and Constructional Engineering*, Lond., Editorial Secretary of; Chesterfield Hospital, Secretary of; Chelsea Guardians, Clerk to the; Dr. C. C. Clausen, Hamburg; Chelsea, Medical Officer of Health of.

D.—Dr. George Dale, Lond.; Mr. Percy Dunn, Lond.; Derbyshire Royal Infirmary, Derby, Secretary of; Danish Eugenics Committee, Copenhagen, Secretary of; Dr. Leonard Dudgeon, Lond.

E.—Dr. John Eyre, Lond.; Edgar Allen Institute, Sheffield; Ecsölent Compounds, Ltd., Lond.; Messrs. W. and T. Evans, Cork; Mr. P. Emanuel, Manchester; Mr. Frank Eyre, Lond.; Messrs. Evans, Sons, Lescher, and Webb, Lond.; P. A. Ensign Advertising Agency, Pittsburg; Mr. N. Earle, Beckenham; Messrs. Eyre and Spottiswoode, Lond.

F.—Dr. N. Fawzy, Alexandria; Fine Art Society, Lond.; Messrs. Fairchild Bros. and Foster, Lond.; Factories, Chief Inspector of, Lond.; Miss Helen Farquhar, Lond.

G.—Dr. Edwin Goodall, Whitchurch; Mr. Lewis Graham, Birmingham; Mr. W. H. Clayton Greene, Lond.; G. W. H.; Glasgow Royal Infirmary, Superintendent of; Miss Gompertz, Glasgow; Gt. Eastern Railway Co., Lond., Continental Traffic Manager of; Dr. Major Greenwood, Lond.; Mr. H. Ginn, Worcester; Mr T. Good, Stannington; Messrs. Charles Griffin and Co., Lond.; Mr. H. R. Gawen Gogay, Southend-on-Sea; General Hospital, Nottingham, Secretary of.; Dr. P. G. Garratt, Earl Shilton.

H.—Dr. W. Jobson Horne, Lond.; Messrs. Higginbothams, Madras; Mr. A. Hamilton, Deganwy; Dr. F. Hardwood-Hardman, Lond.; Dr. L. B. Hayne, Harrogate; Mrs. Harries, Union Bridge, U.S.A.; Dr. F. G. Hopkins, Cambridge; Dr. G. S. Hatton, Wimborne; Mr. W. Heinemann, Lond.; Messrs. J. Haddon and Co., Lond.; H. S. M.; Messrs. Philip Harris and Co., Birmingham; Dr. Albert E. Hodgson, Liverpool; Dr. A. D. Hamilton, Lond.; Hospitals and General Contracts Co., Lond.; The Hospital, Weston-super-Mare; Hoffmann-La Roche Chemical Works, Lond., Messrs. Hanna and Neale, Dublin; Dr. J. Holland, Lond.

I.—International News Co., Lond.; Institute of Archeology, University of Liverpool.

J.—Dr. W. Johnson, Wrexham; *Journal of Nervous and Mental Disease*, New York; Messrs. W. Judd, Lond.; Dr. R. Reginald Jones, Manchester.

K.—Dr. C. C. Kantawala, Bombay; Messrs. Kutnow and Co., Lond.; Mr. John B. C. Kershaw, Liverpool; Kensington, Medical Officer of Health of.

L.—Mr. F. B. Lowndes, Liverpool; London Dermatological Society, Hon. Secretary of; Leeds Public Dispensary, Secretary of; Mrs. Lawford, Lond.; Messrs. R. and S. Livingstone, Edinburgh; Mr. H. K. Lewis, Lond.; Dr. J. C. G. Ledingham, Lond.; Local Government Board, Lond., Secretary of; Mr. James Little, Melbourne; Mr. J. B. Lamb, Lond.; Liverpool Corporation, Clerk to the; Messrs. Lee and Martin, Birmingham; Leeds Association for the Prevention and Cure of Tuberculosis, Secretary of; Liverpool School of Tropical Medicine, Secretary of; L. D. H. R.; Liverpool Stanley Hospital, Secretary of; Dr. S. C. Lawrence, Lond.

M.—Mr. A. Maude, Westerham; Dr. Charles A. Mercier, Parkstone; Dr. A. Mitchell, Ilford; Medico-Legal Society, Lond.; Dr. R. F. McKenzie, Birmingham; Dr. W. Mansell-MacCulloch, Lond.; Mr. J. Murray, Lond.; Mr. W. Martindale, Lond.; Messrs. C. Mitchell and Co., Lond.; Maltine Manufacturing Co., Lond.; Dr. Dan McKenzie, Lond.; Dr. W. A. Milne, Barnsley; Messrs. Macmillan and Co., Lond.; Mr. J. Y. W. MacAlister, Lond.; Medical Defence Union, Lond., General Secretary of; Dr. J. Maberly, Kenilworth; Medical Sickness, Annuity, and Life Assurance Friendly Society, Lond., Secretary of; Messrs. Mayer and Meltzer, Lond.; Dr. F. H. A. Marshall, Cambridge; Mr. William Minet, Lond.; Manchester Royal Eye Hospital, Secretary of; *Midland Counties Herald*, Birmingham, Manager of; Monmouthshire Asylum, Abergavenny, Clerk to the; Mr. J. Metcalfe, Lond.

N.—Dr. J. T. C. Nash, Norwich; North-West Frontier Province, Peshawar, Chief Medical Officer of; Dr. K. L. Nehru, Lucknow; *Nursing Times*, Lond., Editor of; *New York Evening Post*, Manager of; National Association for the Prevention of Consumption, Lond., Hon. Secretary of; New York Association for Improving the Condition of the Poor, Director of; Newquay, Medical Officer of Health of; National Health Insurance Commissioners, Lond., Secretary to.

O.—Ogmore and Garn Urban District Council, Bridgend, Secretary of.

P.—Mr. J. E. Purvis, Cambridge; Preston Corporation, Clerk to the; Messrs. Philip and Tacey, Lond.; Mr. F. C. Pybus, Newcastle-on-Tyne; P. L. H.

Q.—Queen Margaret College, Glasgow, Mistress of; Queen's Hospital, Birmingham, Secretary of.

R.—Royal Commission on Venereal Diseases, Lond., Secretary of; Messrs. J. D. Riedel Co., Lond.; Messrs. Roberts and Co., Lond.; Mr. Frank Richards, Vancouver; Mr. P. B. Roth, Lond.; Royal Schools for the Deaf and Dumb, Manchester, Superintendent of; Royal Medical Benevolent Fund, Lond., Secretary of; Royal Institution of Great Britain, Lond.; Research Defence Society, Lond., Hon. Secretary of; Dr. Athole Ross, Lond.; Royal Waterloo Hospital, Lond., Secretary of; Royal Portsmouth Hospital, Secretary of; Royal Infirmary, Manchester, Secretary of; Rochdale Infirmary, Secretary of; Miss H. Rider, Wellingborough; Mr. William Russell, Lond.

S.—Messrs. Spiers and Pond, Lond.; Dr. F. M. Sandwith, Lond.; The Sanatorium, Mundesley, Secretary of; St. Mary's (Islington) Infirmary, Lond., Medical Superintendent of; Messrs. Sansom Brothers, Mansfield; Messrs. G. Street and Co., Lond.; Mr. S. Stephenson, Lond.; Stockport Infirmary, Secretary of; Sheffield Royal Infirmary, Secretary of; South Devon and East Cornwall Hospital, Plymouth, Secretary of; Southend Waterworks Co., Secretary of; Salford Corporation, Clerk to the; St. Andrew's Hospital, Northampton, Clerk to the; Sheffield, School Medical Officer of; Professor W. Stirling, Manchester; Stretford, Medical Officer of Health of; Dr. W. C. Sullivan, Retford; Society of Members of the Royal College of Surgeons of England, Lond.; Surrey County Council, Kingston-on-Thames, Clerk to; St. Mary's Hospital for Women and Children, Secretary of; Sheffield Children's Hospital, Secretary of; Sunderland Royal Infirmary, Secretary of; Somerset County Council, Weston-super-Mare, Secretary of; Order of the Hospital of St. John of Jerusalem in England, Lond., Secretary-General of; Dr. J. Schwalbe, Berlin; St. George's Hospital Medical School, Lond., Dean of; Society of Apothecaries of London, Clerk to; Dr. J. Pollock Simpson, Lond.; Dr. Halliday Sutherland, Lond.; Mr. Sydney Stephenson, Lond.

T.—Dr. J. C. Thresh, Chelmsford; *The Times*, Lond.; Mr. C. Taylor, Retford; Mr. W. S. Tietjen, Lond.; Messrs. Tindall and Jarrold, Chelmsford.

U.—University, Sheffield, Registrar of; University, Leeds, Secretary of; University College, Provost of; University of Durham College of Medicine, Newcastle-on-Tyne, Secretary of Examinations of.

V.—Messrs. J. W. Vickers and Co., Lond.

W.—Dr. S. A. K. Wilson, Lond.; Mr. E. H. Worth, Lond.; Messrs. Widenmann, Broicher, and Co., Lond.; West London Medico-Chirurgical Society, Hon. Secretaries of; Mr. Harford Willson Blackpool; Fleet-Surgeon Ward, R.N., Chatham; Messrs. J. Woodhead and Sons, Huddersfield; Mr. E. S. Weymouth, Lond.; Messrs. J. Williams and Son, Bradford; West Norfolk and Lynn Hospital, Kings Lynn, Secretary of.

Y.—Mr. Macleod Yearsley, Lond.

Z.—Dr. C. E. Zundel, Lond.

Letters, each with enclosure are also acknowledged from—

A.—Dr. J. Adams, Eastbourne; Ancoats Hospital, Manchester, Secretary of; Alliance Bank of Simla, Lahore; Dr. G. Athanasian, Izmid; Mr. H. Arnold, Lond.; Mr. G. H. Adam, West Malling; Apollinaris Co., Lond.

B.—Mr. W. Bryce, Edinburgh; Mr. G. Sherman Bigg, Lond.; Dr. R. Brewitt-Taylor, Lond.; Berkshire Education Committee, Reading, Treasurer to the; Messrs. F. P. Baker and Co., Lond.; *Birmingham Daily Post*, Manager of; Mr. A. Boulton, Horncastle.

C.—Dr. J. Cates, St. Helens; Messrs. G. Christy and Co., Lond.; Mr. A. H. Croucher, Eastbourne; Dr. B. J. Courtney, Castletown; Central London Throat and Ear Hospital, Secretary of; Messrs. J. and A. Carter, Lond.; Miss Craven, Southport.

D.—Messrs. W. Dawson and Sons, Lond.; Durham County Council, Education Committee, Accountant to the; Derbyshire Education Committee, Accountant to the; Derby Borough Asylum, Rowditch, Clerk to the; Derby County Council, Accountant to the; Dr. H. K. Dawson, Ashstead; Dr. J. H. Davies, Port Talbot.

E.—Express Publicity Co., Lond.; Messrs. England and Co., Hull; Egptian Government, Cairo, Director of Accounts; E. B.

F.—Mr. H. D. Field, Norbury; Dr. R. Felix, Rose Hill.

G.—Dr. C. D. Green, Romford; Dr. A. S. Gubb, Aix-les-Bains; Dr. S. Gill, Formby.

H.—Mr. J. T. Hosford, Lond.; Dr. C. G. Havell, Felixstowe; Dr. W. C. Hayward, Port Said; Hunts County Council, Huntingdon, Clerk to the; H. M. S.; Mr. R. W. Hewson, Stafford; Mr. H. F. Hyde, Worthing; Messrs. Heenan and Froude, Manchester; Dr. W. M. Harman, Winchester; Messrs. T. J. Hewlett and Son, Lond.

J.—Jenny Lind Infirmary, Norwich, Hon. Secretary of; Dr. R. Jackson, St. Helens; J. A. H.

K.—Messrs. C. Knight and Co., Lond.; Captain H. C. Keates, I.M.S., Multan; Dr. J. H. Kellogg, Battle Creek; Mr. C. W. Kay, Lymington; Messrs. Knoll and Co., Lond.

L.—Liverpool Eye and Ear Infirmary, Secretary of; Dr. J. Landsborough, Tighnabruaich; Dr. L. Levinson, Gainsborough; Mr. R. C. Lucas, Lond.; Dr. P. R. Lentin, Dadar; Dr. J. R. Lynch, Lond.; Mr. T. S. Logan, Stone; Dr. H. G. Lawrence, Lond.; Lady Margaret Hospital, Bromley, Hon. Secretary of; London Association of Nurses, Secretary of.

M.—Mr. S. McMahon, St. Colomb; Major R. McCarrison, Kasauli; Dr. D. McCarrol, Norwich; Dr. G. Michael, Beni Suef; Manchester Corporation, Treasurer to the; M. C. W.; Mr. S. Mozumder, Worthen; Mrs. Maude, Hampton Court.

N.—Northampton General Hospital, Librarian of.

P.—Mr. E. T. Perkins, Lond.; Pudukkottai, India, Chief Medical Officer of; Mrs. Page, Lond.; Portsmouth Lunatic Asylum, Clerk to the; Philmar Co., St. Louis; Dr. J. H. Pringle, Glasgow; Messrs. C. Pool and Co., Lond.

R.—Messrs. G. Robertson and Co., Lond.; Dr. C. Russ, Lond.; Mr. W. Graham Reynolds, Lond.; Messrs. Robertson and Scott, Edinburgh.

S.—Dr. S. Samuel, Leeds; Swansea Education Committee, Clerk to the; Saarbach's News Exchange, Mainz; *South Wales Argus*, Newport, Manager of; Sunderland Borough Asylum, Ryhope, Clerk to the; Saccharin Corporation, Lond.; Messrs. Smith and Son, York; Scholastic, Clerical, and Medical Association, Lond., Secretary of; Messrs. Smith and Son, Lond.

T.—Mr. A. H. Turner, Golborne; Dr. T.; Mr. H. Tilley, Lond.

V.—Messrs. Van Houten, Lond.

W.—Dr. A. Waring, Nottingham; Messrs. Wyllie and Son, Aberdeen; Dr. E. Walker, Westray; Messrs. F. Williams and Co., Lond.; W. H. B.

Z.—Dr. L. V. Znaniecki, Strassburg.